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Computer Weekly

Thursday, October 14, 1982

Shares in STC go up for sale

by Donald Kennett

STANDARD Telephones & Cables has followed the announcement of its withdrawal from System X production with plans for the sale of 40% of its shares owned by its parent ITT. STC says the events are unconnected.

The sale, which is to begin this week, is the second biggest ever conducted by the London Stock Exchange. If successful it will bring ITT £210 million, while reducing its holding to 35%. Previous sales of 10% and 15% of the shares were made in 1979 and earlier this year.

ITT chief executive Rand Araskog said the sale was consistent with the company's policy of seeking public ownership for telecommunications subsidiaries serving predominantly local markets. He also said that if the company could not be number one in the bulk production of System X, it was not prepared to be number two making something to another company's design.

STC makes 60% of its sales to British Telecom, its initial compensation for withdrawing from the System X programme is to be a £100 million increase in orders for the TBEA computer controlled analogue exchange which it developed and has started delivering.

Possibilities for its future involvement in public switching in the UK include the speculation that it may tie up with LM Ericsson to sell a version of Ericsson's

Axe digital exchange which leads the market outside North America.

But STC executives say the market will not be particularly profitable because prices will fall rapidly as volumes build up. By 1987 System X production was expected to account for only 8% of its turnover.

At the same time, the company is going to the market with an expected increase in sales of 12% this year and a rise in pre-tax profits from £50.6 million to £63 million. Repercussions from the changes to the System X team range from a renewed possibility of gaining £16 million in government funding for development work aimed at export markets to the probable disbanding of the British Telecommunications Systems consortium in which STC was a partner.

Under the new arrangements Plessey and GEC will take over responsibility for development and production. They will carry up an initial £250 million worth of British Telecom orders between them and will then compete for further business both in the UK and overseas.

The BTS consortium has since its foundation in 1979 concentrated on generalised promotion of System X, handing over to a designated lead contractor as negotiations got more specific.

This arrangement has not led to early success.

Wang to build plant at Stirling

by John Kavanagh

THE high-flying office automation company, Wang Laboratories, is teaming up with Stirling University in a £38 million plan to build computers on the Scottish university's campus.

The new factory will bring 700 jobs over the next five years. It will make a broad range of products, although details have yet to be finalised: the company says its 65% growth rate in the UK means it needs to be as flexible as possible to meet the changing market demands.

Wang's products include a 16-bit microcomputer, 32-bit minis and complete office automation systems, including voice message handling.

"Stirling has a very strong computer science department and we are sure there will be co-operation and research spin-offs," said a Wang spokesman. "And 40% of the staff will be graduates in management and engineering jobs, so it makes sense to be linked to a university."

The spokesman added that most of Wang's business came from the South-East and the factory would give it a greater presence in the North.

The company's only other major manufacturing centre outside the US is in the Irish Republic. It has recently announced expansion plans for its Limerick factory which will take the workforce to 800. It also has an electronics factory in Taiwan.

A Scottish Office spokesman said the move confirmed Scotland's position as the electronics manufacturing centre of Europe. Companies ranging from IBM and NCR to Motorola and Nippon Electric have big operations there.



GRANT... "We are sounding out members to draft our own response."

IBM users still angry

by Kevin Pearson

IBM's response to the Computer Users' Association's criticism of its pricing policies is described as unsatisfactory by CUA chairman John Grant.

"We have had a written response from IBM which was not completely satisfactory. We are sounding out Council members at the moment with a view to drafting our own response."

It seems unlikely that IBM will withdraw any of the price increases which were announced in August, and described by the CUA as "exploitative". The CUA wrote to IBM complaining that price in-

creases this year had raised costs by 14%-15%, and added that this was unacceptable since both inflation and interest rates had fallen substantially since IBM's last price increase in February 1982.

The CUA asked why, in the light of lower interest rates and single-figure inflation, IBM found it necessary to raise prices on a six-monthly basis. In fact, the August rise represented the fourth significant price rise in little over 15 months.

The significance of the last price rise is that IBM has increased the costs of using its top-line 3081 systems for the first time.

Hunt cable report eagerly awaited

by Donald Kennett

PUBLICATION of Lord Hunt's report to the Home Office on the proposed national wideband cable network was eagerly awaited earlier this week.

Potential investors wanted to hear that the arrangements would be stable over a period long enough to get them into profit, probably 20 years at the least, and that there would be few restrictions to inhibit cable publishers.

Potential service operators such as Racal-Oak, Tesco, Debenhams, Thomas Cook, wanted to see arrangements that would foster the fastest possible growth in subscriber numbers.

British Telecom and its unions wanted to see the greatest possible opportunity for BT's involvement in building the network, so that it would enhance rather than undermine investment in its telecommunications and data networks.

The broadcasters were concerned to protect their over-the-air services from excessive competition for scarce advertising revenues, audiences and programming resources.

Hunt was asked to report on social and commercial implications such as the above-mentioned and to make recommendations on issues such as whether there needed to be a separate body to regulate the industry and whether service providers should be allowed to operate their own local networks.

But a major area for concern has been whether the network or networks should be based on optical fibre or coaxial cable and whether they should be in the form of an unswitched tree or a hierarchy of switched star networks.

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'Tories could cut value of Telecom 25%'

by John Kavanagh

BACKBENCH Tory pressure to sell off British Telecom before the next General Election could cut the value of the company by 25%. And the suggested move has added fuel to the opposition of British Telecom unions, which planned a 24-hour strike yesterday (Wednesday) against the plans to sell 51% of British Telecom to private investors.

At the same time BT is calling on the government to take over much of its £3,500 million debt so that it is not immediately saddled with interest charges of £500 million a year as well as dividend payments to shareholders.

Industry Secretary Patrick Jenkin wants to introduce the enabling legislation to sell off BT next week. If it gets through by July, as predicted, he is expected to go under increasing pressure from backbench Conservative MPs to start the share sale as soon as possible.

The government's original intention was to push through the legislation but to put off the sale until after the election, which could be as late as 1984. The Labour Party has sworn to make

the proposed sale a major election issue.

A Department of Industry spokesman said Jenkin had no intention of issuing the shares before the election. But he added, "No one can foresee the date of the election. If it is well into 1984 that is a long time to wait and some backbenchers are asking, 'Why wait?' If the election was very late the Industry Secretary would need to consider the political pressures."

Leader Comment - Page 15

Douglas Hawkins, analyst at the stockbroker James Capel and Company, said, "Given that Labour would renationalise British Telecom if it won the election, the early sale of the shares could reduce expectations by 20% or 25%. It may well be even more drastic. The small punter in particular would be terrified of buying."

Hawkins did not think the government would go for an early sale. "I see no advantage for the government," he said. "It would be better to be able to offer an attractive package after the election."

Meanwhile BT unions were starting their campaign against the sale. Three of the six unions - the 130,000-strong engineers' union, the POEU, the 30,000 BT members of the clerical CPSSA and 7,000 people in the Society of Civil and Public Servants - were expected to support the call for a one-day strike. The three other unions, representing mainly managers and supervisors, did not strike but are strongly supporting the campaign.

Labour leader Michael Foot, Shadow Industry Minister Stanley Orme and TUC general secretary Len Murray were due to speak at a rally in London. Marches were also planned for other cities.

The POEU walkout was expected to have the greatest effect on users. National organiser Bert Brewer said 30,000 members alone handled service faults. No faults or equipment installation would be dealt with. The CPSSA walkout would mean no bills would be processed.

"A day's strike is only a hiccup in business but it's just the start of our campaign," he said. The unions will be lobbying MPs and sending leaflets to customers.



FREESE... "In Sweden there are no exclusions."

European doubts on UK data protection plans

by Kevin Pearson

DOUBTS whether the UK's proposed data protection legislation will meet the requirements of the Council of Europe were voiced last week. At a meeting of international data protection authorities in London, the government's White Paper on data protection failed to get a clean bill of health.

The implication at the Fourth Annual Data Protection Commissioners meeting was that there are several shortcomings in the White Paper. But no one would go as far as to say that the proposals, if passed into law, would be insufficient to ratify the Council of Europe Convention on Data Protection. The UK is one of the signatories to the Convention.

Attention was drawn particularly to the exemptions on access to information held by the security forces, and the exemption of such computer systems to registration. Concern was also expressed about the proposal that there should be a one-man data protection authority in the UK. In most of the countries which have passed data protection legislation, there are multi-member authorities.

The data protection commissioners, representing Sweden, Denmark, Israel, France, Austria, Norway and West Germany, refused to be drawn about the

shortcomings of the White Paper proposals, even though in most cases the legislation that they enforce in their own countries goes much further than that proposed for the UK.

For example, in most of the countries the multiple member commissions contain a security cleared member who has the authority to check on disputes involving the security services.

Jan Freese, the Swedish Commissioner said: "In Sweden there are no exclusions, though the subject's right of access may be restricted in some circumstances."

Buoyant CMC to take on more staff

Hemel Hempstead-based Computer Machinery Company last week announced a 56% increase in orders for the nine months ended September 24 and is to boost its staff. Some £32 million of sales has been achieved compared with £20.5 million for the same period last year.

The company, a subsidiary of US firm Microdata is planning to increase its headcount by 300 in the next year.

'750 jobs may go'

ABOUT 750 jobs will be lost and 140 offices closed if the Inland Revenue accepts proposals to centralise income tax collection at its two big ICL 2900 computer installations in Cumberland, Scotland, and Shiple, Yorkshire. The proposals are being considered by management and unions.

Honeywell boom

HONEYWELL's profits are booming, but it is selling fewer computers in the US. Third quarter figures released last week showed income up 35% to \$43.8 million, compared to \$32.4 million for the same period in 1981. Chief executive Edson Spencer said that US computer orders are down "substantially".

Bureau sale

MOBILE radio firm Air Call has bought 75% of the UK's largest DEC bureau, Allen Computers International, to gain more computer expertise. Air Call is part of a major consortium bidding for a licence to provide a computer controlled radio service.

Eire on the MAP

THE REPUBLIC of Ireland is to launch a MAP type awareness programme to encourage Irish businessmen to make more use of microtechnology.

LINE NOISE

DISGRUNTLED with the Socialist policies of French Prime Minister Mitterrand, IBM is understood to be taking a close look at its European investment strategy. And the UK could be the beneficiary of the distrust of foreign companies across the pond. Government ministers, including Industry Secretary Patrick Jenkin, will be visiting Havant soon for "discussions". Jenkin said last week in Brighton that the dominance of IBM does give the government cause for concern, but he stressed the company was determined to be "a good citizen" wherever it is. The government keeps "very closely in touch" with IBM, he said, and he assured his audience that the company had been of enormous benefit to this country.

ACORN's next microcomputer offering, the Electron, looks like missing out on this year's run up to Christmas. Problems with yields of the ULA at the heart of the £150 32K machine make it likely to be January or February before the machine is available in significant numbers.

THERE are strong indications that users of the new ICL DMI distributed mainframe will be offered a choice of operating systems. Not only will the much-maligned VME be available, but TME as well. And a third, far more illustrious operating system is set to make a comeback on the machine destined to take ICL into the 1990s. Its name? George 3.

ALL is still not well with DEC's authorised terminal distributor programme. The company is discussing new proposals with the dissatisfied UK distributors. There are five terminal firms and two authorised industrial distributors.

THE much-heralded Alvey report into how the UK is going to beat the Japanese at their own game over the next five years has so far caused about as much reaction in the UK computer industry as a loud long yawn. According to sources close to Whitehall, Minister for IT Ken Baker was hoping that Alvey would recommend positive collaboration with the Japanese, but not come up with an open-handed demand for money which the government has all along made plain was not going to be available. In the event Alvey has probably collected himself a hall and farewell for ignoring both sides.

ACCORDING to reports coming from the US, the BTG is now considering a self-off of the Inman factory in Colorado in order to fund the operation at Newport. The reports follow a far unsuccessful attempt by Inman director Richard Parris to raise private finance in the US last year (see front page story).

Tops goes up market

by John Kavanagh

THE government's Tops training scheme has gone up-market and is backing 15 unemployed university graduates on a Master's degree course in software engineering.

The students, mostly engineers, are specialising in robotics, image processing, automatic testing and other applications for industry.

"About 300 graduates applied and we selected the 15 for training for employment, not just for their suitability for the course," said Hugh Sharp, head of computing training at the Manpower Services Commission, which runs Tops.

"I'm keen for the MSC to move away from purely basic training

and to put more effort into meeting the skill shortages at higher levels. This course will do something to help overcome the shortage of engineering people with software skills."

Sharp said the scheme did not overlap with the normal procedures for putting people on Master's degree courses. Applicants had to be at least 27 years old.

The students are attending the course at the Institute of Science and Technology in Cardiff. The MSC is paying the course fees and a tops allowance to the students. Normally the Tops scheme is aimed at people who are 19 or over and who have been in work or unemployed for two years.

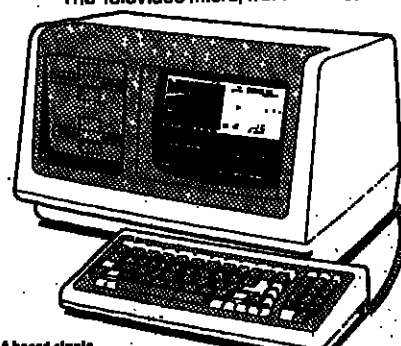
If you like our terminals you'll love our micros

TeleVideo, manufacturer of one of the most successful ranges of computer terminals, now has an 8-bit microcomputer.

All TS800 models are built around the Z80A chip and use the popular CP/M operating system.

A clear growth path is provided from the stand-alone 84K TS802 to the 128K multi-user TS816.

The TeleVideo micro, from Data Type



TeleVideo Systems
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Private backing for Imperial College software venture

by Philip Hunter

A MAJOR private initiative to develop UK software engineering expertise has been launched by National Westminster Bank, Plessey, Pactal, and Imperial College London. They have founded a new company, Imperial College Software Technology, which will meet some of the goals set by the recently published Alvey Committee report.

The software company hopes to exploit academic research in the commercial marketplace, one of the main recommendations Alvey made in the report on the future of the UK computer industry.

Imperial College Software Technology, or IST, plans to be a link among industry, commerce and universities, with emphasis on technology transfer.

"We will be a commercial organisation," emphasises Jim Feeney, managing director of the company and past head of Hoskyns. Feeney expects IST, which will identify and develop innovations in software technology, to make a profit from sale of consultancy and services by 1985.

At first IST will employ 12 people, but the target is 30 by the end of 1983, and 100 by 1986.

IST was first conceived two

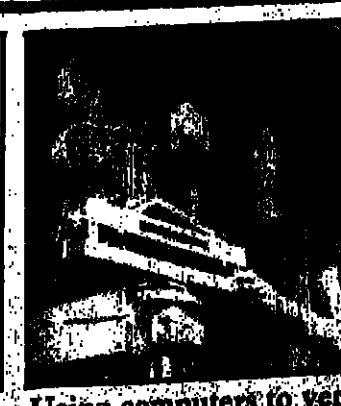
years ago by Professor Lehman of Imperial College, who is chairman of the company.

Citing the fragmentation of most of the significant work in this country on software engineering, IST's founders say it will concentrate on software services and development tools to reduce software maintenance costs. "We don't see ourselves getting involved in the application software business," Feeney says.

Pactal estimates the present world market potential for IST's products and services as more than £200 million a year, with some £18 million of that in the UK.



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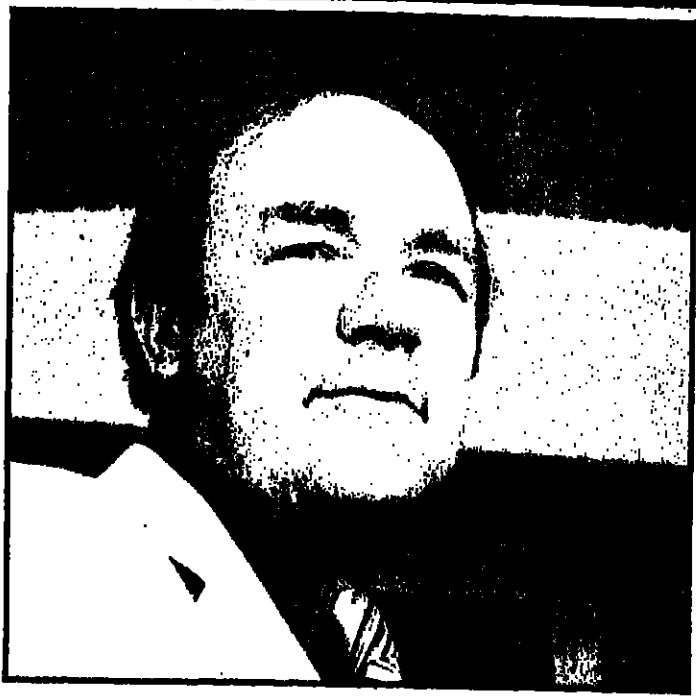
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Latins link to fight language domination

by Jack Gee
THREE French companies have taken the battle against the English language domination of computers across the Atlantic to Spanish-speaking Mexico.
Agreements were signed recently in Mexico City between the French and Mexican governments and between Mexico's National Council for Science and Technology and three leading French computer service firms, CISI, G-CAM and Sllgos, which were not previously active in Mexico.
A joint communiqué, which followed a four-day seminar organised by the French embassy and Mexico's Economic Planning and Budget Ministry, stressed the importance of using other languages besides English in establishing data banks.
The communiqué said: "We attach particular importance to maintaining the national identity of each of our countries and to defend and promote all languages, and particularly French and Spanish, as languages for production and communication."
The French and Mexican governments added: "The big data-banks and databases which exist today throughout the world were created to meet criteria which applied to the big industrial countries and are not always suitable to developing countries."
"It is therefore necessary to give a big boost to Spanish databanks and databases in order to create an independent Latin-American potential."
The communiqué stressed the need for two-way traffic in information in contrast with the one-



LOUTH... Tandem still gets the stockbrokers' recommendations.

Tandem slips in US as its UK sales double

by Donald Kennett
THE UK arm of "non-stop" mini-maker Tandem doubled its sales to over £6 million this year as its US-based parent company slipped to only 60% growth.
Tandem senior vice-president Bob Marshall attributed the drop in increase in sales (from last year's 91% increase in turnover) to the recession, and to the fact that such high rates of growth get much harder to sustain as a company expands.
He said that this year's results from the group, due to be released within the next few weeks, will be well over \$300 million, with pre-tax profits kept within the company's target of 16%-20% of sales.
The 60% growth is set against a 40% growth in staff, compared with a 70% staff increase last year, and the sales-per-employee average has stayed around the \$100,000 level, which Marshall claims to be one of the best in the business.
Already the company has disproved the dictum of the Boston Consulting Group expert who said that the management team which takes a company from zero to \$50 million sales will take it into bankruptcy if it is not replaced.
It is still run by its founder James Treibig and Bob Marshall who joined in its second year before its products went on the market.
According to UK managing director John Louth, the company still attracts the recommendation "buy" in stock analysts' reports. UK sales have more than doubled to over £6 million this year, he adds.
Recent criticism in the West German Press suggested Tandem had reached the limit of its growth because it had concentrated on large companies and repeat business at the expense of sales to medium-sized companies which were the staple of other minicomputer manufacturers. The suggestion was that it had now saturated its market.
Marshall confirmed that his target was large companies, but said: "It is a very large market and we have hardly scratched the surface of it." He also confirmed the repeat business fact.
The company looked for customers that were likely to expand their applications quickly, he said, and its systems were designed to cater for unpredictable growth patterns.
The largest Tandem network installed is the company's own 350-processor international network which is used in running the company.
Order entry, manufacturing, personnel, accounting and field service applications run online on it and all departments have access to each other's database, many of which are distributed over several sites.

SALES BRIEF Export order for medical specialist

MEDICAL systems specialist Nodecrest of Hyfleet has won a \$270,000 export contract from a New Jersey teaching hospital for one of the world's largest nuclear medicine image processing systems.
The system will be connected to four gamma cameras for tomographic studies and cardiac diagnostics and to eight VDUs to provide clinical and administrative data.
The prediction came from stockbroker Ian Cole of James Capel & Co at last week's Financial Times World Telecommunications Conference in London.
A more market oriented organisation on the part of BT is needed to exploit the opportunity, he added, both to employ BT's resources as efficiently and competitively as possible and to occupy the substantial increase in capacity that the integrated services digital network (ISDN) based on System X would have.
"It is important to appreciate the relevance of the magnitude of increased capacity the ISDN represents," he said, "All the FTs will be concerned to sell this massive surplus capacity, and price and competition will be critical."
The Mercury alternative telephone network and the cellular radio markets would be the most significant new competitive forces. But the growth in value-added network services (VANS) such as electronic mail and transaction services also should be important new markets.
Investment opportunities would rise substantially over the next three or four years. During the past 12 months the first of the new and emerging companies with products and services for the liberalised markets had begun to seek loans and equity capital to fund their developments.
Small local service companies would probably number several hundred in five years' time, while dealers in telecommunications terminals would probably match the 2,000 or so microcomputer dealers that had emerged over the last five years. Manufacturers could rise to well over 200 before the inevitable shake-out.
There were currently 130 manufacturers, although the big three accounted for over half the total sales, and they earned an average 10.5% real return on capital compared with 3.5% for the whole of British manufacturing industry.
These high risk investments were complemented by BT's need for external financing, which would be for about 80% of a £9.7 billion requirement for the telecommunications services industry as a whole over the next eight years. By 1990 the telecommunications services market would be worth £12 billion, having grown at 8% compound, and the equipment market £4 billion, having grown at 7%.
Data services would be worth £3.8 billion and data and office equipment £3.5 billion, both overlapped with telecommunications.

BT 'a computer giant by 1990'

by Donald Kennett
BY the end of this decade British Telecom will be the largest owner and operator of computer power in Europe. That will give it opportunity to build a major software business in both the data and communications markets.
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LONG... "Honeywell's answer to growing market."

Honeywell joins the top-end battle

by Kevan Pearson
HONEYWELL has entered the battle at the top end of the general purpose computer market with a new water-cooled £2.4 million processor complex.
The new machine is targeted to compete in both price and performance with IBM's 308X range, and Sperry Univac's top range 1100/90 systems. It is available in two versions at the moment, though the company claims to have more powerful versions in the pipeline.
The DPS88/81 is a single CPU system, with up to 16 Mbytes of memory, costing about £1.7 million, placing it between IBM's 3083 model B and model I.
The DPS88/82 is a dual processor complex, delivering up to eight times the performance of Honeywell's previous top-line system, the DPS870, the company claims.
Following similar moves from IBM and Univac there are also plans to launch a four-processor version.
Brian Long, Honeywell's UK managing director, described the new machines as Honeywell's answer to rapidly growing market. He said that current estimates showed the demand for raw computer power growing at between 20 and 40% per year. One study in the US estimated that the growth rate could be as high as 60% annually.
Long also said that 1982 promised to provide a record year for Honeywell's UK operation.
The new machines are based on a different chip technology from that used by other mainframe manufacturers. Honeywell uses Current Mode Logic, while IBM and the other US manufacturers use Transistor Transistor Logic. The much feared Japanese use Bipolar Coupled Logic - fast and expensive to manufacture. Honeywell claims that CML has advantages over both the other types.

Political parties get IT show

by John Kavanagh
THE National Computing Centre is doing its bit to ensure that whichever party forms the next government will know all about information technology. It had stands at two of the four main parties' annual conferences and is offering to help them raise money to pay for its research services.
Philip Virgo, the NCC's technology assessment services manager, took a one-man information technology show to the Conservative and Liberal conferences - and got an enthusiastic response from the Labour Party for next year.
Virgo feels more computer companies should be investing in telling political parties about information technology for the long-term benefit of the industry.
"All parties are putting together information technology policies but they have no central research sources," Virgo said. "The NCC has the information but our training packages are priced for the industrial market. We are therefore offering to help them run conferences to raise money for our services."
Virgo said the conferences could be on political topics of interest to business, such as the government's use of computing and ways of negotiating new technology agreements with staff.

Bank to test Aregon on its customers

by Donald Kennett
MIDLAND Bank is installing an Aregon IVS-3 private viewdata system for home banking trials with an undisclosed number of customers during next year.
It has placed a £150,000 contract with Systems Designers to develop protocol emulation and message translation facilities for links to its existing Burroughs mainframe-based OLCS online system, on which all its banking and accounting applications are run.
Customers with viewdata terminals will be able to call the system for information on their accounts such as what transactions have gone through and what standing orders are current. It will not be possible to initiate actual payments during the trial.

Company doctors aim to teach practical management methods

by Philip Hunter
A US company that specialises in improving the efficiency of large organisations is making an impact on the UK computer industry. The company, Kepner-Tregoe, already claims to have had dramatic success with hardware engineers at Digital Equipment and Hewlett-Packard.
This success was achieved by cutting out wasted site visits, said Kepner managing director Brian Bentley. Kepner's main successes are with high technology, engineering and service companies, he said.
The old dying manufacturing industries are resistant to Kepner's methods, and harder to make more efficient, he added.
Bentley explained that Kepner tries to teach a practical management philosophy to its clients. "We haven't enough people ourselves to teach all the managers," he said. So instead the aim is to spread good management through an organisation by teaching it to just a few people.
One of management's biggest faults, according to Bentley, is a tendency to wait for the same old problems to recur, and then come up with the same old solutions. Kepner tries to instil a more positive approach that penetrates the surface of the problem.
Bentley admitted that the abstract nature of Kepner's work renders it open to plagiarism. "But you can't copyright ideas," he said. "So we have to work on trust."
Kepner claims that 60 of the 100 top US companies have consulted with them at some time. In the computer industry, the representation is even stronger among the top companies, with clients including IBM and Honeywell.
Kepner was set up in 1958, and now turns over \$20 million of business worldwide. Early in its development it started to run courses for managers, which Bentley now admits were founded on bad premises.
"We taught them what their problems were, but not how to solve them," said Bentley. "If we could, we would repay the companies that came on our early courses," he added.

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Text retrieval increases micro power

by Philip Hunter
A TEXT retrieval system that offers microcomputers facilities which until now have been the preserve of large installations has been announced by the National Law Library Ltd (NLLL). The system will be distributed by Oyez Computer and Automatic Information Management, and is aimed specifically at the legal profession.
But NLLL says that any small business that needs to recover information from a mass of documents could benefit.
The system called MicroBird will store free-formatted text on disc or tape, and allows the user to select documents for printing or editing by entering a word, or words contained in it.
Text can be stored in documents, paragraphs or sentences, and words can be combined in several ways to form search expressions, which can be modified if the search produces the wrong documents.
MicroBird is available now on the Apple II microcomputer using the UCSD p-system, and on the Onyx microcomputer under Unix.

Army contract

ADVANCED Computer Technologies of New York has won a US Army contract for \$2.3 million to implement and maintain optimised versions of its Pascal, Cobol 74 and Fortran 77 compilers on machines Level 6, IBM 370 and 4300, Digital Equipment VAX and PDP-11, Univac 1100, Perkin-Elmer 3200, Motorola MC68000 and Prime.
Executive sale
DRG Business Machines has won a contract which is expected to be worth £400,000 to supply TEC Starwriter Executive 55-chips daisy wheel printers to Technology For Business (formerly Logabax) for onward sale with Systime word processors. It has been taking the printers in small quantities for the last six months.
£2m orders
MAI's four-month-old Birmingham office has won orders worth over £2 million for a total of 23 Basic Four-mint and microcomputers. One of the four Model 710 large systems is going to Palitoy in Leicester.

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The Duke of Kent takes over as president at the British Computer Society's twenty-fifth anniversary celebrations

BCS royal charter bid

by Boris Sedacca
THE Silver Jubilee of the British Computer Society last week brought it a royal president, but left it undecided on its bid for a royal charter and increased recognition as a professional body.

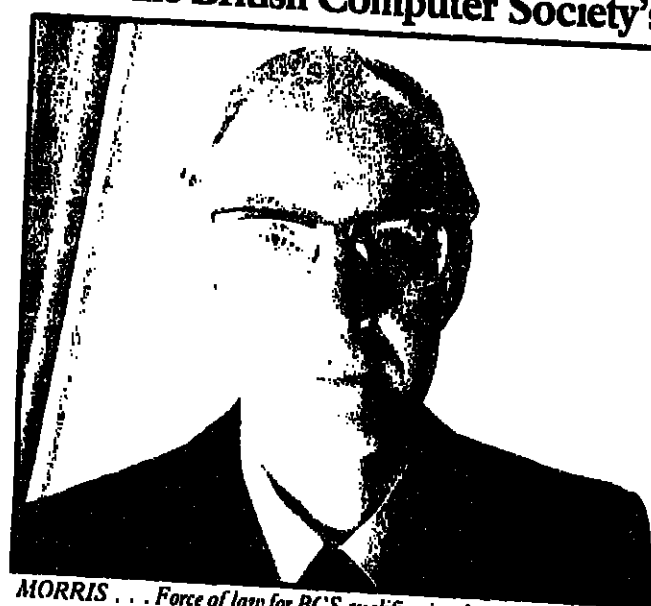
For the charter would be a major step in gaining for the Society the sort of legal recognition that other professional societies and institutions possess — the role of providing mandatory qualifications for entry into full membership of their professions.

Ernest Morris, incoming BCS vice-president, said that it would not be beyond the realms of imagination to find legal applications in

computing where the BCS qualifications may be given the force of law, in areas such as census statistics processing or data protection requirements.

In Singapore, the BCS has secured an agreement with the government that all public employees in computing would be required to have passes or be exempt from BCS examinations.

And past-president and ex-ICL director Peter Hall believes that the BCS can move in that direction in this country. Referring to the Society's dropping membership figures, Hall said that the answer was not to make it easier to join the BCS, but to make it harder.



MORRIS... Force of law for BCS qualifications?

The BCS began the long process of applying for a Royal Charter at the beginning of 1981 and later that year set up an executive committee to do a feasibility study.

Hall said the Society was now

consulting its members on the advisability of proceeding with a petition for the charter but even if they did decide to proceed it was unlikely to be granted in under four years.

'The Reformation has arrived'

by Kevin Cahill

THE British Computer Society, 25 years old last Thursday, celebrated the event in some style before an audience studded with Lords, MPs and addressed by a Duke.

The Duke of Kent, new president of the BCS, told the gathering that computing and the work of the British Computer Society are of concern not just to the professionals in the "field", but to us all.

By emphasising the relationship between the data processing professional, and the increasingly microcomputerised end user world, the Duke set a theme which was raised again and again by conference speakers at the jubilee conference.

Peter Bagnall warned that the age of the Reformation had arrived for the computer professional.

Bagnall, managing director of staff and services at W. H. Smith, spoke of the "the age of the Reformation when... data processing professionals... will be exposed to non-conformism and the practice of our techniques by the laity."

According to Bagnall, "the comfort of a religious order, with monkish programmers and analysts, has sustained us through the birth pangs of the industry. Soon staff at all levels within our companies will directly operate both personal systems and the subsystems of the corporate machine and will have to come to terms with the disciplines of

structure and time which best us."

Bagnall did not think the transition would be comfortable. "The movement towards end user involvement is inexorable and one which has been anticipated and promoted by the professional computing fraternity as well as by the manufacturers. The user friendly attributes of the new order will, however, bring with them a host of professional and social problems which we and the companies we serve are not well prepared to face."

Bagnall saw computing staff having to deal "more and more frequently with the half-educated and half-informed — the professionally immature."

Most of the present generation of computer systems were equipment dominated, according to Bagnall, who said some of the characteristics of computer professionals would make the reorientation towards true user friendliness much more difficult.

"Because computing requires total precision and lengthy design and implementation periods, ways of thinking which are alien and incomprehensible to our colleagues, and an approach to problems which often seems ponderous to them, have developed."

Bagnall suggested that computer professionals suffered from tunnel vision, and identified with the computer rather than the company and its commercial requirements.

Telecoms authorities 'obsessed with speech'

by Kevin Cahill

THE national telecommunications authorities have been slow to recognise the real needs of computer users because of their obsession to provide speech communications services. The view was expressed by Charles May, British Telecom director of research, at the BCS Silver Jubilee conference.

While gently criticising the communications industry, May thought the obsession was a correct one, since "their main revenue traffic has been and still is overwhelmingly that between human beings communicating by speech."

The convergence of technology, particularly computerised digital and digital based telecommunications hardware, has provided solutions for the communications engineers which made the transition from speech driven systems to digital systems much easier, according to May. He said there was a similar need for, "a convergence in thinking between the professionals in computing and telecommunications."

Returning to the theme of end user involvement set by the Duke of Kent, May said that the need for convergent thinking was urgent because the computer user was no longer a professional prepared to spend time and effort in training himself — or frequently herself — in how to get the best out of a machine. The modern user was

someone who saw it as a "tool of the trade" and, just like all other tools, expected it to be as easy to use as possible.

This, May said, posed problems for the telecommunicator too. The traditional computer was becoming a dispersed machine, with terminals probably themselves having intelligence and storage, needing to communicate with each other and with remote files, printers, sensors, mass storage devices etc. It must be simple to use and easy to learn.



MAY... "Slow to recognise real needs."

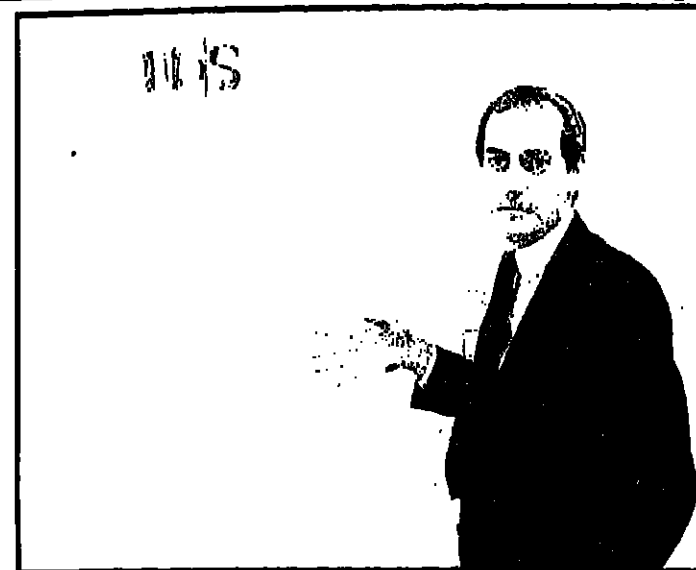
System 38 attack on the mini makers

by Boris Sedacca
IBM is set to launch a full-scale attack on minicomputer manufacturers with its System 38.

According to Mike Newman, managing director of Interactive Database Systems, the first stage in IBM's strategy to regain market share in small business systems came with the launch of the System 38, which is better functionally designed than offerings from the minicomputer manufacturers such as Wang's VS, Hewlett Packard's HP3000, and Digital Equipment's VAX.

Now IBM wants to make the System 38 cheaper and a better performer than anything else. "It will be like the 4300 which blew a hole in the leasing market and the IBM look-alike industry," said Newman.

Last week, IBM began shipping the recently-announced top-end System 38, the Model 7 which has roughly the same power as a 4341



NEWMAN... IBM is reluctant to announce a separate System 36 range.

Group Model 2. Newman expects about 50 of them to be installed by year-end, bringing the total System 38 population in the UK to about 300 machines.

"One user who has taken delivery of the machine says it is now the way it should have been from the beginning. He said that a batch run of MAAPICS, IBM's manufacturing control package, previously took 36 minutes to run but now goes through in 13 minutes. He is now doing bill of materials explosions on-screen," Newman said.

Newman said.

"MAAPICS was converted to System 38 from the smaller, conventional architecture System 34 and uses batch routines like in-terminable sorts, and so on."

Despite the demand for a machine to bridge the gap between the 34 and the 38, Newman believes IBM is reluctant to announce a separate System 36 range because a new desk-top machine is in the offing for 1984/5 which would obsolete it and the System 34.

Transpac halts new connections

by Jack Gee

TRANSPAC, the French data project switching network, has had to stop accepting new subscribers in the Paris area for the past six weeks because equipment suppliers are unable to keep abreast of demand.

Management of the network, which is owned by the French Ministry of Posts, Telecomms and Telediffusion (PTT) says it hopes to be able to resume new connections in the capital shortly.

Connections for provincial subscribers are continuing without interruption at a rate of 100 a week.

A Transpac official said: "We have a special problem in Paris because 2,500 of our 7,000 dedicated lines are operating here. Transpac also has between 3,000 and 5,000 gateway users who access via telephone, telex and slow speed terminals."

Transpac hopes to ease its headache when three new switching nodes are brought into

service shortly, bringing the total to five.

SESA, which designed Transpac and supplies its software, has been encountering delivery problems because of its success in scooping worldwide orders for data packet switching networks. Australia, Brazil, New Zealand and Luxembourg are SESA customers.

Disappointment with Transpac's failure to meet demand was expressed at IBM-France where the new networks and services manager, Gustave Bardi, said: "Our shipments of interface equipment to French customers using Transpac are being delayed by the network's inability to handle traffic demand."

He added: "Transpac is growing too fast in a complicated technical environment. It is extremely sensitive to traffic load. At IBM-France we are worried about the complexity of dialogue between computers and Transpac's switching nodes."

The network's reliability and the quality of maintenance are suffering."

The IBM manager said his company was often handicapped in responding immediately to customer complaints of rejection because of difficulties in tracing the source of the network.

IBM announced interface products as soon as the French proclaimed the arrival of Transpac. Two years later, when the network went into service in 1978, a wide range of products had been developed for the Transpac X25 protocol at IBM centres in Kingston (New York), Raleigh (North Carolina) and Toronto.

Since then, further interfaces have been developed by IBM-France at its research and development centre at La Gaude, near Nice.

Transpac's capacity has risen from 1,500 subscribers in 1978 to 1,100 as the target for the end of this year.

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'Golden age' in 1990s predicted by Sinclair

by Kevin Cahill

ONLY war and government interference can prevent the arrival in the 1990s of the most golden age man has ever known, according to Clive Sinclair.

Speaking on the BBC programme "Futures" to a less-than-enthusiastic panel, Sinclair said that as fully intelligent machines appeared in the decades following the 1990s, individual wealth could rival that of a Roman emperor.

Sinclair noted that less than 30% of our workforce is now employed in manufacturing industry, a 15% decline in a decade.

He also pointed out that 29% of the workforce is producing only 23% of the gross national product, and that by the end of the next decade he expected less than 10% of the workforce to be involved in manufacturing.

The vehicle for this new golden age, according to Sinclair, would be in the creation of thousands of small innovative companies in IT.

Ken Gill, general secretary of white collar trade union TASS, said he had been to California and it was not like that at all.

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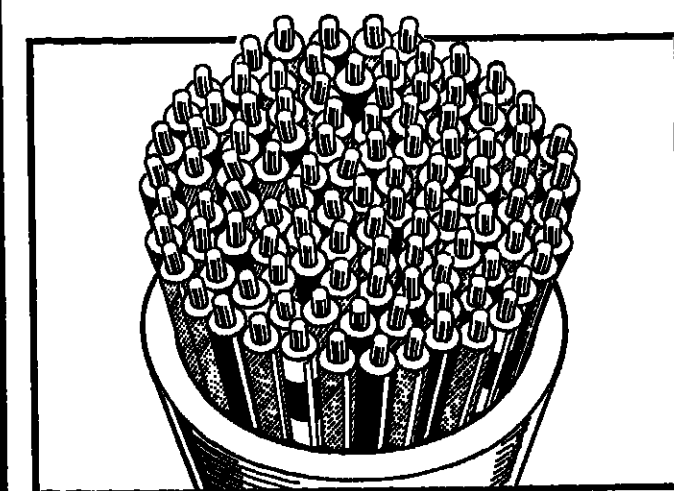
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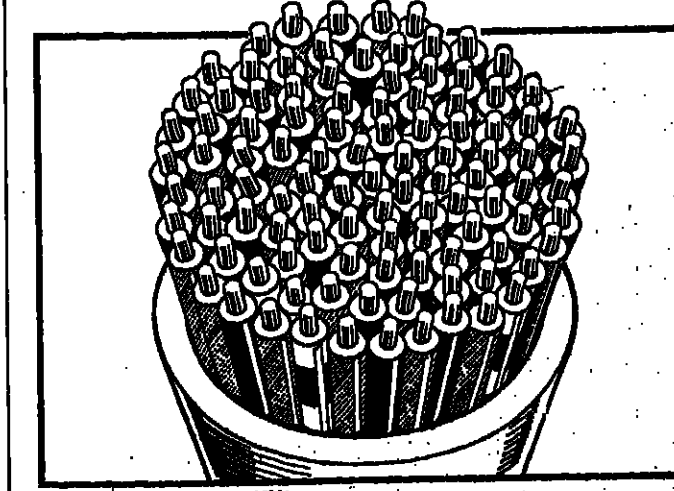
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MICRO NEWS

Sony tries for own standard

HOPES that the muddy waters of microfloppy disc standards were clearing have suffered a set back. Sony, looking good as the leader in the sub-four inch disc format with a 3 1/2-inch system, submitted its own basic design to the ANSI standards committee, rather than supporting the proposal based on that design put forward by a group of US and European drive and media suppliers.

Sony's action took the group by surprise, as Sony had been working with those companies to prepare the standard presented to ANSI. The group, which styles itself the Micro-Floppy Standards Committee, has many salient drive and media companies in its membership. These include Verbatim, Shugart, Micro Peripherals, BASF and, and recently joined, Memorex.

A design supported by these companies, backed by current market leader Sony, would be well placed to win general acceptance.

Chairman of the US group, Verbatim's business planning manager Charles Payne, says that he was surprised by Sony's move. "We thought they had agreed to go along with our design," he says. Sony's view is that there was no change of direction on its part, rather that Payne's group had misunderstood the position.

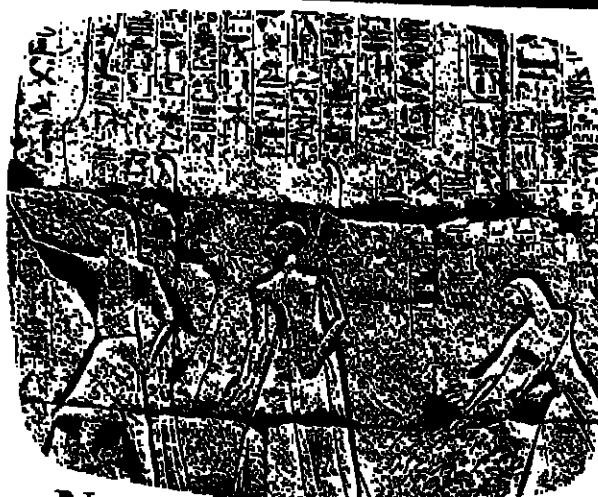
Although Sony incorporated some of the changes to its current 3 1/2-inch design that the US group favours, including support for an 80-track configuration and inclusion of an automatic shutter, there is still a major difference in the type of disc media and in rotation speed.

Sony uses 100-microinch thick discs, rotating at 600 rpm, while the rival proposal goes for 40-50 microinch discs running at 300 rpm.

The group's proposal would be compatible with software already around for 5 1/4-inch floppies, which Payne sees as being very important but which Sony does not see as a significant problem. It also would use standard types of media already being made.

"Verbatim, BASF, Dysan and others already make this sort of media," says Shugart's general manager for venture projects, Yoshi Ahara. "It has better performance and gives scope for the future."

Micro News is compiled by Robert Parry



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Micro is 'four times speed of IBM PC'

IT IS not often that operating speeds for micros are quoted in mips (millions of instructions per second), usually because they get nowhere near this fast. But now an American machine, built around the Motorola 68000 microprocessor, has appeared on the UK scene, with a claimed speed of two mips.

Benchmark tests put it at four times the speed of an IBM Personal Computer and 14 times that of an Apple II. Such speed will open up new application areas, allowing large financial models to be run and giving scope to expert systems.

The Sage II, marketed in this country by TDI of Bristol, runs the 68000 at 8 MHz with no wait states, using fast (150ns) 64K dynamic RAMs to keep pace. It comes with the UCSD p-system as its standard operating system, but is a general purpose computer, says Sage founder Rod Coleman, and will be able to run under other operating systems.

Digital Research is currently working on an implementation of CP/M-86 for the machine.

Coleman, who designed various Z80- and 6502-based computers before the Sage II, set up the company Sage Computer Technology with two others, Bill Bonham and Bob Needham, in August last year. Sage II was the result of three years' "armchair design", says Coleman.

"I always wanted to build this computer," he says, "but held back because of the expected major announcements from the big boys like IBM and DEC. Then when these appeared they were just a succession of 1977 vintage machines really."

The concept for the company was a machine with 10 Mbytes Winchester, one Mbyte RAM and the 8 MHz 68000 all on one board, he says. But a fire in January played havoc with this plan, as most of the design for the hard disc machine was lost. "We needed finance, and had committed to appearing at the West Coast Fair in mid-March, so put in a lot of effort on the floppy version."

The show was only 47 days after the fire, but Coleman managed to arrive there with nine machines, software and all.

Intel sets its sights on CMOS technology

THE semiconductor industry's flight towards CMOS as the favoured technology for the future has gained momentum with Intel's adoption of a new CMOS process derived from its NMOS technology HMOS-II.

From modest beginnings - two microcontrollers introduced this week - the new CHMOS (the "H" is for high performance) process will grow to be used in more than half the company's new products by 1984, across all product areas.

"There's a revolution going on," says Intel's microcontroller operation marketing manager Joe Baranowski. "1983 will be a year of many new products in CMOS."

Many major manufacturers have already hitched their wagon to CMOS technology, notably US rivals Motorola and National Semiconductor but it is never too late providing you come in with the right technology, says

Baranowski.

The main spur is the insistent need to bring down power consumption of chips and so be able to cram more devices into smaller areas. Dissipation of heat from circuit elements can be a major problem in closely packed ICs, and moving to CMOS is the easiest way of combating the problem.

Intel claims that its new process is as dense and as fast as any of the few advanced CMOS processes available on the market, and considerably better than most CMOS. It comes out of Intel's HMOS-II process, and gives the same performance and density but with a tenfold reduction in power consumption.

It is more complex, needing 12 process steps rather than HMOS-II's 10, and so more expensive, but Baranowski sees price parity between the NMOS and CMOS processes by 1985.

The close similarities between

HMOS-II and CHMOS helped Intel get the new process into high volume production, and put it squarely in the line of process developments from NMOS through HMOS in 1979 and HMOS-II in 1981, to 1982's CHMOS and next year's planned CHMOS-III.

This next development will follow the trend of most of these transitions in shrinking dimensions by about 20%. The aim is 1.5 micron channel length rather than the present two microns.

Baranowski calls this progression from HMOS to CHMOS "technology synergy", and sees the new process providing the essential power-dissipating shrink path for very large scale integration.

He sees CHMOS soon taking over many current IC applications and being predominant in most future ones.

In the past, the tendency has been to introduce new process technology to memory circuits, he

says, but Intel has chosen to introduce CHMOS on microcontrollers first. These are single-chip devices incorporating CPU and memory, typically used for applications in real time control and where interfaced to the real world.

"There were two main reasons for this," says Baranowski. "There is a market demand for such devices in CMOS, to satisfy needs of portable and battery powered devices, and they are standalone products - naked runners that don't need other chips around them." All microcontroller development is in CHMOS now, he adds, with the recently introduced 16-bit 8096 being the last NMOS product.

Other products will follow on soon, with CHMOS moving into all other product areas. These will include EPROMs and EEPROMs, as well as "leading edge memory products, by the middle of next year at the latest," says Baranowski.

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SOFTWARE FILE

Hallmark brings success to ABS

by Philip Hunter
THE Working systems house ABS Computers has kept forward in the busy commercial applications market after allying itself with software house Hallmark.

The result is a new applications software package called Absolute, for which ABS provides the hardware and systems software, and Hallmark the applications software.

ABS already has a series of commercial packages, some written by itself, some by Hallmark. But the new system has better communications, says ABS sales director John Parnell, and can link terminal-based software using the CP/M operating system, with a database on the main computer.

Parnell explains that ABS has always looked for lucrative links with other companies. "We've always acted as honest brokers." Absolute offers the usual range of modules, including sales order

processing, stock control and production control. Hallmark admits that the scope of the applications software it has contributed is unexceptional. "But the methods are not," claims its managing director, David Rates.

The typical non-DP user cannot cope with a set of building blocks to create his own systems - he does not know what he wants. But equally, says Rates, there must be some flexibility.

The secret of Absolute is that it allows the customer to choose his application, and then modify the system with customer parameters, Rates adds.

Absolute will be supplied as standard on the ABS MX Series of business minicomputers. "The aim is to meet 80% of fundamental accounting and recording needs," says Parnell.

Much of the other 20%, adds Parnell, should not be computerised anyway. "You will agree

that one of the traps of computing is to try and put literally everything on the computer."

A data link called Transient from ABS supplies some of the missing 20% of fundamental business needs, says Parnell. This enables CP/M software to process data at a terminal from a database on the main MX computer. The data can be returned to the main database after processing.

ABS is one of the companies chosen by the Department of Industry to develop an Office of the Future. The multi-terminal MX Series already provides word processing facilities, and electronic mail with filing and retrieval is expected to be added soon.

Hallmark was one of the first UK companies to specialise in commercial software after its formation in 1974. The first link with ABS was in 1976 when its ManuMark system was put on to the ABS Multibus range.



PARNELL of ABS... "We've always been honest brokers."

Software cash

US SOFTWARE houses have been given £1½ million in the last four months under the Department of Industry's Software Products Scheme. So far 23 software firms out of the 32 that applied have had their applications for cash accepted under the SPS scheme.

CP/M menu gives confidentiality

by Andrew Thomas
CP/M users concerned over file security should be interested in a new user-configurable menu system which provides password protection on any options. Logging facilities keep track of all file access attempts, whether successful or not.

The security information is available to any program loaded and run by the package, Visa-80 from the Middlesex company Mediatech, allowing such facilities as user-dependent reconfiguration of applications.

This enables the system to be configured in such a way that selections not required by specific users are actually removed from the menu. Similarly, confidential applications will simply not appear in the menu, and the permissions system prevents their use even if the keywords are known.

Visa-80 also provides a useful back-up log which serves as both an index of what files are on each disc, and a monitor on how old the actual discs are.

Thus old discs approaching the end of their reliable lifespan can be

replaced before they begin to give problems, rather than waiting until the system crashes.

Visa-80 also scores in the area of multiple copies of files and programs on a single Winchester disc. Whereas previously files for different users were stored in separate floppy discs, the required disc being loaded as and when required, the use of fixed discs can prove problematic when several different versions of the same file are required.

For example, the package allows up to 16 different companies' accounts or 16 independent word processing systems to be stored in the same Winchester, each having individual password protection and document confidentiality.

Visa-80 requires 26K of disc space, and provides no main memory overhead, according to Mediatech director Clive Butler.

"Response times are not affected by the package," he says, "because Visa-80 is only called once, at the start of each menu selection."

All this for a mere £69. Every home should have one.

Software registered on disc

by John Kavanagh
A REGISTER of microcomputer software is being built up by micro distributor Encotel Systems for sale on floppy discs at £10 a copy. The company sees the register as useful for end users and as a cheap form of advertising for software suppliers, which pay £50 a year for their entry.

"We have a team of people on the project and we are searching every possible source of information," said marketing director Bill Bostock, the brains behind the register. "We have around 300 systems registered but we want to give all program writers the chance to take part."

"We are taking an impartial view of the register - its credibility depends on our willingness to include packages which compete with our own products."

The register, Softsource, gives brief details of each supplier and application and lists the machines



BOSTOCK... impartial view.

it runs on, the operating system and programming language, the price and the cost of the manual.

Entries are free for the first year. Users pay £10, and Encotel dealers £5, for each issue. The register will be produced every two months.

Encotel, formed two-and-a-half years ago, now has a turnover of £1 million and 30 staff. It is a distributor for Televideo, Intergraph, Superbrain and BMC Oki microcomputers.

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The compactness of the new GEC 4190 has given a significant boost to power conservation. In some cases power consumption has been reduced by an astonishing 70%.

Up: performance.

In its present 32-bit, 64K RAM form, the GEC 4190 turns in an outstanding performance, but this

is only a taste of what the future holds. For instance, the basic store boards are designed to cater for 256K RAMs. When these become a commercially-viable proposition it will be relatively simple to build 16M Bytes of main store into the CPU. The GEC 4190 is fully compatible with all the machines in the GEC 4000 Series and enjoys the facilities afforded by the award-winning 'Nucleus' central executive.

Down: size.

Incorporating the main memory into the CPU has resulted in the machine being reduced to just two cabinets. In a typical 4M Byte system for example, the new GEC 4190 takes up just one third of the space of the GEC 4090.

Up: peripherals.

In addition to the wide range of peripherals available on the GEC 4190, a new option is being offered in the form of an 8 inch Winchester type cartridge disc.

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COMPANY NEWS

NMW slip on eve of listing

LESS than six weeks away from its planned Unlisted Securities Market placing of shares, Norwich-based NMW has produced six-months profits slightly down on the previous year.

Turnover at £1,350,480 is marginally up on the previous year's £1,271,292, while profits fell £77,000 to £305,529 compared to the same period last year.

Brian Johnson, NMW managing director, says that the lower profit is because in the previous year an unusually high proportion of annual profits turned up in the first half.

The current year has shown a more normal pattern, Johnson says, and "the result is almost

exactly in line with budget."

This would imply that the company will meet the analysts' average forecast of profits over £600,000.

Traditionally NMW, which is a bureau specialising in administrative accounting services for stockbrokers via a pair of ICL 2980 machines, turns in most of its profit in the second half of the year. Turnover is very much related to the volume of bargains struck on the Stock Exchange as the company charges a fee for each transaction processed.

The company handles about 35% of all Stock Exchange transactions and has pushed up turnover in the first half of this year despite



JOHNSON: "In line with budget."

the low volume of trading on the Exchange.

In the past few months the number of daily transactions in stocks and shares has risen substantially, and NMW is likely to benefit.

US recession takes its toll of leading computer companies

IN the grip of the worst recession since the 1930s, America presents a mixed picture, with a number of computer companies suffering alongside their more traditional engineering cousins.

Amdahl Corp, the leading US plug compatible supplier, is still experiencing delivery and engineering problems with its new 580 machine.

Eugene R. White, company chairman, recently said that the corporation was just "two BCs (engineering changes) away" from full specification performance.

According to Peter Labe, the computer industry analyst with New York stockbrokers Smith Barney Harris Upham, this means that early machines already delivered to customers will have the changes fitted retrospectively on site and new customers will have the changes already installed in machines when they are delivered in the first quarter of 1983.

Labe is forecasting a very low profit for 1982, around \$7 million, compared with \$25 million in 1981.

But he remains confident about

1983. Labe says White's assertion that he would be disappointed not to surpass the 1978 figure of \$2.78 per share in profits, is conservative.

Despite warnings earlier this year from Amdahl's treasurer that 1983 would see a heavy drain on cash, Labe is forecasting a profit for 1983 of over \$70 million.

DEC, a key indicator of the health of the computer industry, has lost a number of executives over the summer and is expected to lose more, according to Labe.

The company is going through a major reorganisation and Labe admits that the meaning of the organisational changes is not yet clear.

DEC has just completed its first quarter for the new fiscal year and Labe is forecasting sales of \$950 million and earnings per share of \$1.20, a drop of 25% on his previous forecast. The analyst warns that \$940, and \$1.10 per share, is a distinct possibility.

For the year 1982/83 Labe says that his forecast of earnings per share of \$7.55 still looks attainable.

Cray Corp, builder of the largest and fastest computers in the

world, has lost its marketing president Peter Appleton Jones, and is going through an upheaval unparalleled in the company's time.

The company's founder, Seymour Cray, has resigned his executive offices and is now a consultant to the corporation. Cray has closed its Boulder laboratory and moved the entire product line as well as announcing the X-MP and its series machines.



WHITE: "Just two BCs away."

Rejected US supplier bounces back in UK

FOLLOWING the debacle of its departure from the arms of UK based Case Ltd, US word processor supplier NBI has bought up the Case-created operation to market the NBI products in the UK.

According to NBI president Thomas J. Kavanagh, NBI feels positive about the expanding potential for international sales.

He did not specifically refer to the UK, however, where NBI will

acquire the assets and employees of the former Case operation and integrate them into the existing NBI operation which already has two fully staffed offices in London.

Case dropped the NBI range following investment of about £11 million, on the grounds that communications software for the end of the NBI range had not been forthcoming.

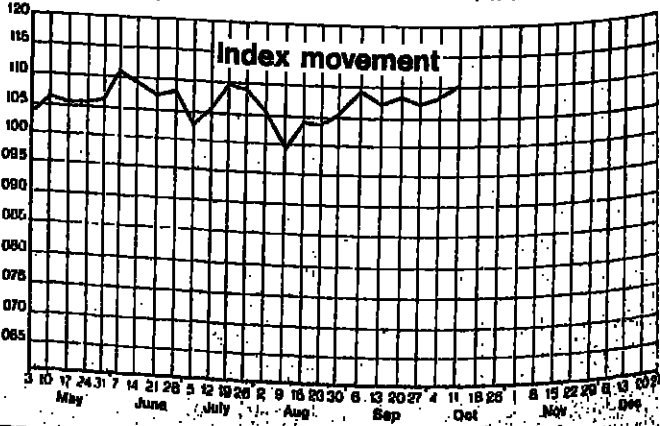
SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Date 18/10/82		Index 131.18		Page 118	
Price	Stock	Price	Stock	Price	Stock
150	ACT (App Com) (20p)	250	10	250	10
150	BOC Int (20p)	100	10	250	10
150	IT New Kent (20p)	100	10	250	10
150	Chubb (20p)	100	10	250	10
150	Calve Group (20p)	100	10	250	10
150	AS & S (20p)	100	10	250	10
150	De La Rue (20p)	100	10	250	10
150	Entel Ltd	100	10	250	10
150	Perren (20p)	100	10	250	10
150	DEC (20p)	100	10	250	10
150	ICL (20p)	100	10	250	10
150	Reliance (20p)	100	10	250	10
150	Code Int (20p)	100	10	250	10
150	Multiware (20p)	100	10	250	10
150	Practical (20p)	100	10	250	10
150	Alpha Data	100	10	250	10
150	Office & Elec (20p)	100	10	250	10
150	Philips Long (20p)	100	10	250	10
150	Wessex (20p)	100	10	250	10
150	Quintus (20p)	100	10	250	10
150	Real Elec (20p)	100	10	250	10
150	Southgate (20p)	100	10	250	10
150	Thames (20p)	100	10	250	10
150	UCB (20p)	100	10	250	10
150	OTHER MARKETS	100	10	250	10
150	Bus Comp (20p)	100	10	250	10
150	Comart (20p)	100	10	250	10
150	Int Systems (20p)	100	10	250	10
150	IT Tech (20p)	100	10	250	10
150	Kath (20p)	100	10	250	10
150	Miles (20p)	100	10	250	10
150	North & West (20p)	100	10	250	10
150	Southgate (20p)	100	10	250	10
150	Star Comp (20p)	100	10	250	10
150	Trident Comp (20p)	100	10	250	10
150	Zygon Dyn (20p)	100	10	250	10

The table shows the closing prices in London on Friday and in America on Thursday. The Share Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.

*Shares traded on the Unlisted Securities Market or under Rule 163(2)(a).



Company News is compiled by Kevin Cahill

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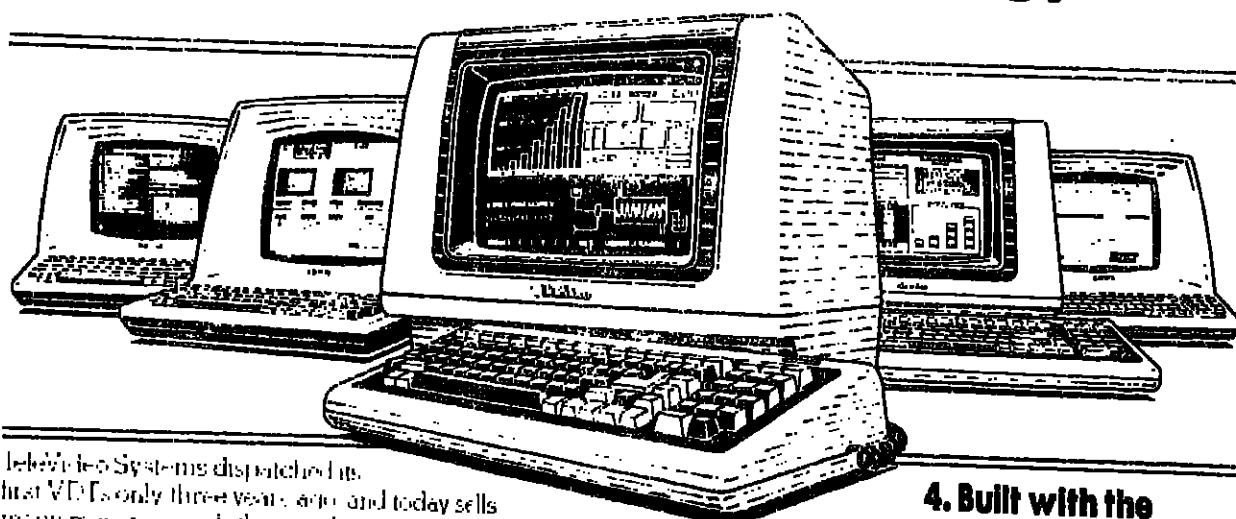
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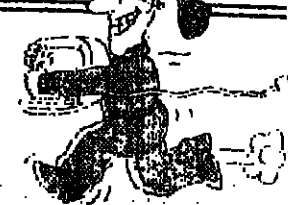
Our complete product range offers features to suit your requirements, from our conversational 910, through our smart 925 and 950 models.

2. Our reliability rate is the highest in the industry.

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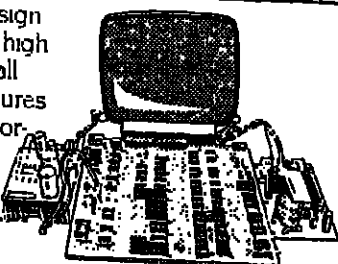
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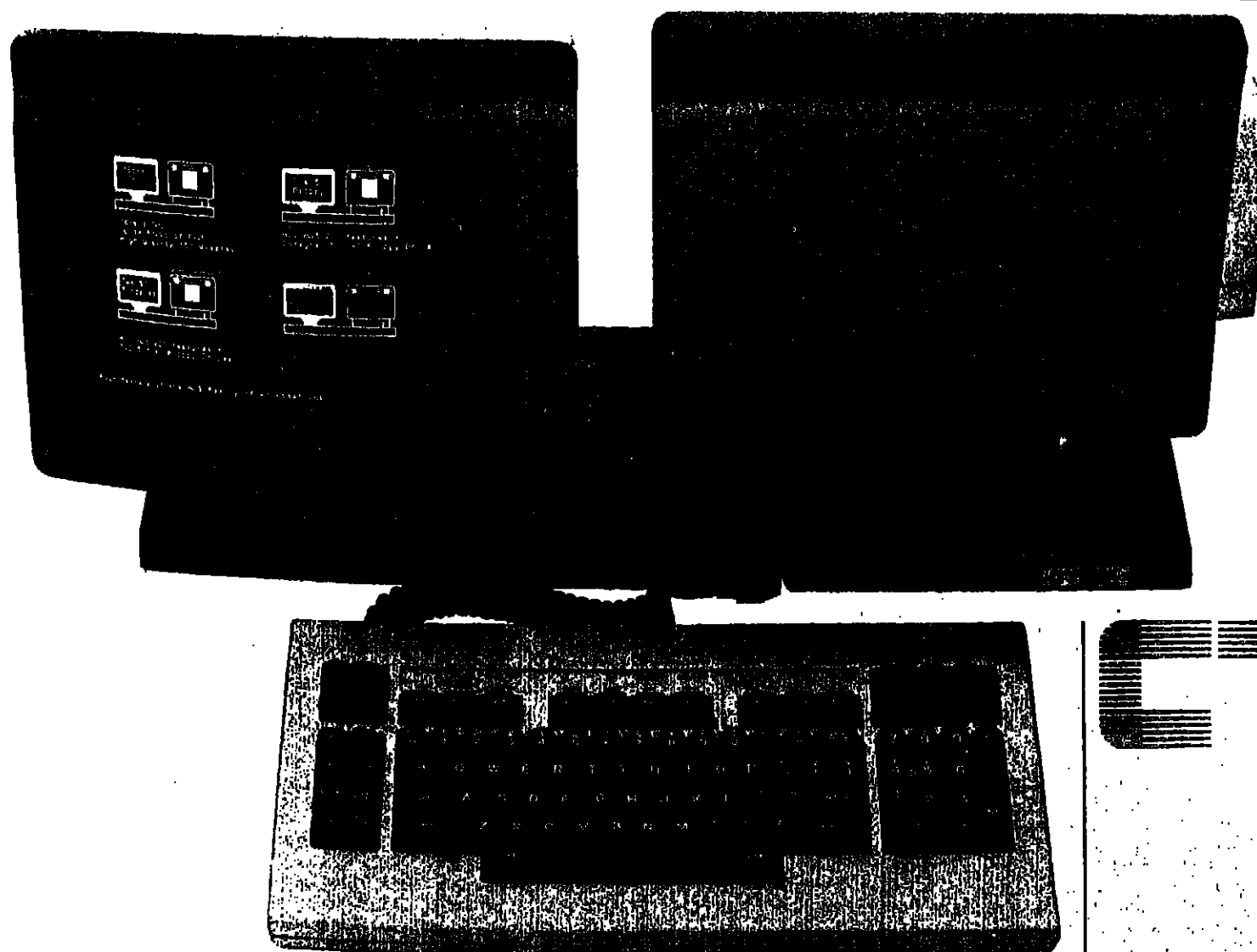


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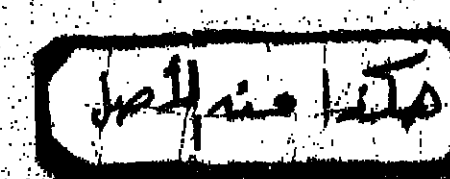
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TeleVideo Systems, Inc.



Start with one, you could end up with a network

CTL Computer Technology Limited



an ITC Information Technology Company

PLATFORM

How the services industry can keep down the dole queues

THERE are currently 1,000,000 registered trading companies in the UK, ranging from the large multinational ICI type corporation through to your local corner shop. Of these I would estimate that only 10% use a computer to control their "business critical" processes such as accounting, fixed assets, trading control and statutory returns.

The computer software services industry has concentrated on mini and mainframe computers in supplying systems to probably less than half of this 10% of companies. Even with this market, the software services industry is some 20,000 people under strength and yet the UK has over 3,000,000 people unemployed.

The microcomputer is now maturing in its usefulness in business applications and there is a much greater awareness and acceptability of the micro.

Given that this pot-pourri of facts exists, it would seem that some gentle guidance is required to point everybody in the direction of each other before they start bumping into each other and knocking themselves out. Part of this guidance is provided with training by the ever-increasing use of computers in schools, which means that over the next few years our academics will be armed with a fair knowledge of computing and an ability to talk in Basic, Pascal, or some other programming language.

In other countries, particularly the US, unemployment of reasonably articulate and educated individuals has been kept down by the creation of an enviable services industry. Pick up a phone in the US at any time of the day or night and you can get almost anything from a Kentucky Fried Chicken to a Cadillac.

Could this happen with the UK computer services industry? I believe that it can. We are developing



PROFILE

What now for the man who formulated Maggie's policies?

IT would be an exaggeration to credit John Hoskyns with being the brain behind Margaret Thatcher's political brawn. But his behind-the-scenes influence certainly had a formative effect on Conservative economic policy in the run up to the last General Election.

Before becoming involved with the Conservative front bench in 1975, Hoskyns' formidable intellect was largely responsible for building the international Hoskyns Group.

In 1975 he sold his computer empire to the US Martin Marietta Corporation and began his work on economic policy. He then met Alfred Sherman and Sir Keith Joseph, with whom he held inter-ten informal policy meetings until 1977. By then he had met Thatcher, Howe, Prior and company, and submitted a formal proposal on domestic and economic policy.

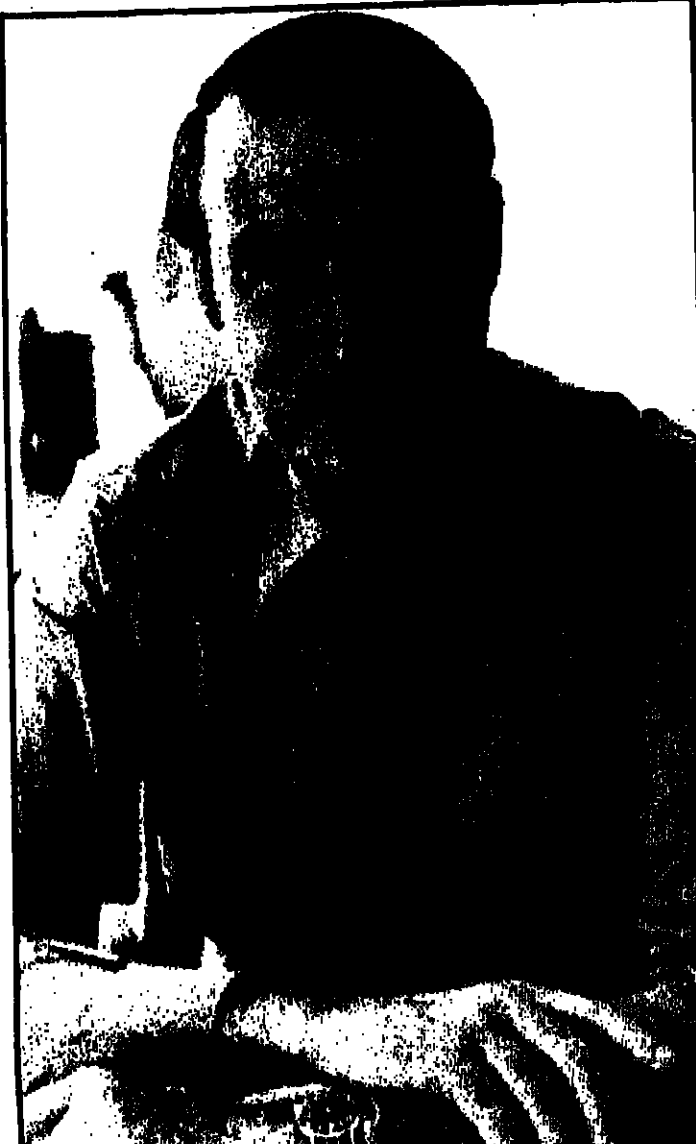
Clearly they liked what they heard, for Hoskyns was given a full-time appointment and became head of the No 10 Policy Unit after the 1979 election victory.

He retired in April in the belief that the post needed someone more interested in politics in the run up to the next General Election.

"Policy interests me more than politics," he has several times commented. He had no full-time job waiting for him, although he has expressed interest in taking a few directorships in the information technology industry.

But since April much of his time seems to have been devoted to selling Conservative policy in the media. In a *Times* article under the headline: "Will the Utopians ever learn to live in a real world?", he argued against "the politics of envy," and put the government on public sector pay.

He later replied in *The Times* to critics of the original article and argued: "As far as general living standards are concerned, it does not greatly matter if we have to pay more to a handful of judges, civil servants, and generals" — unless trade union activists make it matter by constantly drawing public



HOSKYNs... More interested in policy than politics.

attention to the imbalance, he added.

Despite his wealth of experience in the computer industry, Hoskyns had little influence on government information technology policy.

Instead he concentrated on economic policy in his belief that the disciplines of high technology can be applied to more general prob-

lems. He belongs to the hard-line right wing school that teaches the curriculum of the marketplace. Let us run the country effectively on commercial lines, this school teaches its pupils in the streets.

Possibly the real reason for Hoskyns' quitting his No 10 post is the feeling that he has no more contribution to make. Certainly his

record suggests this, since he was never one to leave grass unmown when head of the Hoskyns computer group, which he founded in the mid-1960s as a firm of management consultants.

In the late 1960s and early 1970s Hoskyns followed a ruthless growth and acquisition trail, and launched his Systems Management subsidiary in 1968. This was the first of its kind in the UK and began working in close liaison with the National Computing Centre to develop software management techniques and undertake research in hardware selection.

Hoskyns scored several other notable firsts during this computer dawn. Again in 1968, Hoskyns installed the first UK computer, an ICL 1901, to be used exclusively for commercial and production system development.

It then introduced engineering companies to the joys of professional computing expertise.

Then to cap a great year, he launched one of the first "computer appreciation in schools" projects.

Early in 1969, he took the then unprecedented step of attacking the Yanks with UK computer technology, giving a seminar at a New York hotel. Here he unveiled yet another first, his Segment Level Programming, which was already being used by British Leyland at Cowley on an ICL 1900.

In 1970, Hoskyns Systems Research offered a replacement for the time-honoured flowchart called Tablemaster, a decision table. For the first time we heard of a company boasting of "reduction in programming time of 60%". The sort of claim of which we are now heartily sick and tired.

After this growth slowed down, and by 1971 Hoskyns suffered from the recession that then hit the computer services industry. He was forced to close down a vast redundancy notice to his consultants on the education side.

But there were to be more reverses before the 1975 US election. In 1974, the first phase of the Police National Computer Project, for which Hoskyns was writing the software, was completed.

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS.

Thursday, October 21, 1982

First 25 years of the BCS

AN organisation which has survived for 25 years may well have good cause to celebrate. But if one stands back a little from the euphoria of the British Computer Society's Silver Jubilee, one may detect a more aggressive body emerging.

Measured against itself, the BCS will say that it has done more than survive — that it has "prospered" for 25 years: 26,000 members, 42 branches throughout the country, and so on.

But placed in the context of the industry as a whole, the growth of the BCS has been unimpressive. True, it has provided some outstanding leaders and industry captains, but few employers regard non-membership of the BCS as a serious obstacle to filling a senior position in computing.

While the appointment of a royal personage to the post of BCS president will be regarded as a quaint little English eccentricity by our counterparts in Europe and the US, it would be unjust to dismiss the Duke of Kent's role as merely providing an ornamental mouthpiece for the BCS.

In an otherwise innocuous prepared speech, written in such a way as to offend nobody, one thing which stood out was the Duke of Kent's reference to the "power and influence which this new technology was destined to acquire."

The BCS looks set to make a bid for power and influence. Should its members decide to go ahead and petition for a Royal Charter, the Duke of Kent will prove an invaluable ally.

Accountants have secured for themselves the force of law for qualifications to enter their profession, and the same will apply to engineers if the Finniston proposals are adopted.

The growing power and influence of computing means that certain safeguards are needed. That includes professional vetting of people working in sensitive areas such as data protection, where no single professional body holds sway at the moment.

If the BCS moves decisively now to exploit these issues, it could become a force to be reckoned with in the industry rather than just another learned society or a club of like-minded individuals.

Telecom sell-off

BACK BENCH Conservative MPs are said to be rubbing their hands in anticipation of the effect which the sale of 51% of British Telecom will have on the nation's profit-and-loss account. So eager are they to get BT into private investors' hands that they are urging Industry Secretary Patrick Jenkin not to wait until after the next General Election, but to issue the shares as soon as possible.

When the government announced its plans to sell the shares it said it would introduce the enabling legislation straightaway — but wait until after the election before putting BT on the market. That was the nearest it could come to putting the sale to a national referendum.

But now it is thinking about the unthinkable. For despite the government's original assurance, the Department of Industry refuses to deny the possibility that the shares will be sold before the election.

If this were to happen investors would be taking a tremendous gamble with their money. For if the Labour Party nationalise BT, and City experts say this prospect could cut the price of those BT shares by 25%.

The BT share issue will be the biggest thing to have hit the Stock Exchange for many years. It will take many months to organise, and even if the legislation is ready by July 1983, as expected, it could still be 1984 — the latest possibility for an election year — before the shares are available.

The Labour Party has announced its intention to make the sell-off of BT an election issue. Whichever side of the fence one sits on, the issue is important enough to be put before the voters, even if only as part of the government's overall policy. An under-sold pre-election sale would leave less money for the national purse, and demoralise BT.

1984 and all that...

THIS week's example of the strange things people say about computers was sent in by Ghassan Kubba of London, who wins £5. Only extremists can spend valuable time on a computer, and at Brunel students are actively discouraged from using the computer too often as part of their course.

LETTERS

Exports to South Africa Computer disasters

I SEE Computer Weekly (October 7) through its correspondents Linda Rout and Bridgette Lawrence has seen fit to join the left-wing mob in howling against computer exports to South Africa, totally avoiding the wider issues, which directly involve the safety of all of us living in the West.

South Africa is the only really stable economy in Africa. It offers also the only hope of a base against Russian and Communist ambitions in both south and mid-Africa.

Consider what would almost certainly happen if the South African republic failed to exist in its present form. How long would it be before tribal warfare returned and the Russians were "called in" to "liberate" the "oppressed" on some excuse or other?

If you don't think this would happen, take a look at Zimbabwe. How long has that country got before internecine warfare wipes out its economy and its stability?

I personally am sick to death of this Communist-inspired clap-trap about South Africa, which would be more suitably printed in an anti-Nazi league rag.

ROBERT T. STREET
Woking, Surrey.

Truth about typewriters

IN YOUR article on the Maltron keyboard (CW, September 9) you perpetuate the myth that "the typewriter keyboard was designed to slow typists down to avoid early mechanisms jamming."

There is no evidence that the qwerty keyboard was designed to slow people down. But it was designed to stop the typewriter keys jamming. Sholes' typewriter had a circular type basket in which the keys struck inwards from around the type basket to hit the underside of the platen. The keys had a tendency to jam, particularly when two keys close to each other

in the type basket were used one after the other.

The evidence is that Sholes started with an alphabetical order keyboard and that a few keys were rearranged so that keys which occur frequently next to each other (as in T and H) came up from opposite sides of the basket in order to make them less likely to jam. This has nothing to do with slowing down the typist nor with trying to speed the typist up. It merely helped to solve his mechanical problems.

IAN LITTERICK

London N7.

Burroughs' profits

I REFER to the headline "King of Burroughs gets great results" (CW, September 9).

As a totally unbiased outsider, however, in the name of accurate journalism can you attribute 12 months' profit to a new managing director of one month's standing. Please give credit to his predecessor who would you believe took early retirement at the age of 56!

M. N. BULL
Managing director
Trident Computer Services,
Birmingham.

Editor's note: The first line of the news story states: "Burroughs UK last week provided some good news for its new managing director." Nowhere were the results attributed to Mr King.

Telephone messages

YOUR report on IBM's Audio Distribution System headed "IBM's voice message add-on reaches Europe" (CW, September 23) is incorrect in stating that "the system will also be limited to communications between telephones attached to a single exchange or network of exchanges."

In fact, messages can be sent from almost any telephone anywhere in the world. As well as push button multifrequency telephones, ordinary rotary telephones, to which a low-cost portable tone generating device is attached, can also be used. The travelling businessman, for example, can therefore use ADS from a public telephone box.

M. D. STOTT
External communications manager
IBM,
Portsmouth.

SIA charges

YOUR report "Can you data up for sale" (CW, September 2) states that digitised boundary data is available from SIA Computer Services.

However, the article states that non-profit making organisations would be charged £107 per boundary, commercial users: £150 and other bureaux £225.

This should in fact have read £1.07, £1.50 and £2.25.

ELAINE PRIESTLEY
Manager, marketing unit
SIA Computer Services,
London SW1.

I CANNOT let I. D. Follett's comments (CW, September 30) on John Kavanagh's article (CW, August 26) go unremarked. As Follett states, a computer "disaster" every 30 minutes in the UK would be over 17,500 per annum. If this figure did not include "normal" hardware failures (and I feel sorry for Follett if hardware failures at his installation are the norm), the computer manufacturers would be making enormous profits, selling replacement systems.

Follett goes on to state that for "normal hardware failures... standby facilities are irrelevant". I would suggest that this statement demonstrates that he has not grasped G. Hitchcock's second selling point.

Hitchcock was not only promoting his company's services, he was also promoting the concept of contingency planning — for all contingencies.

The necessity for contingency or disaster planning is not determined solely by the possibility of fire, flood or terrorist attack, it is a function of the need for the computer to continue in service. Installations may have commendably low MTBFs and MTTRs, but in the context of disaster planning these have little significance when the Maximum Time to Recover (Max TTR) exceeds that period during which the organisation can continue in normal operation (the critical period).

It has been observed that this period averages 4.7 days, although certain types of organisations quote figures of two days or less, and a number of processes have critical periods measured in seconds or less.

To illustrate this point about Max TTR, let us briefly examine a few cases:

1. Computer downtime exceeded one week while waiting spares.
2. Failure of a data communications line caused chaos in an airline reservation system. The total downtime was not excessive by MTTR figures, but exceeded the critical periods.
3. Loss of vital data following a system failure compounded by lack of adequate back-up caused loss of service for over three days.
4. A much-heralded product launch was delayed by a computer failure. This caused loss of com-

pany prestige and threatened potential sales.

5. A bug in the operating system caused total downtime exceeding seven days in a 14-day period; this bug was only discovered after two years' live running, and was initially diagnosed as a hardware fault.

Each of the above would be termed a "normal" failure. The effects may appear a little extreme until one examines the relationship between Max TTR and critical period. In each case the Max TTR exceeded either the industry average or the organisation's critical period.

In only one case above did the organisation have a contingency plan. Unfortunately the plan did not cover the event concerned.

The effects of the loss of service from an organisation's computer(s) can be considerable. However they can be substantially reduced by planning ahead for the disaster that will come, in one form or another one day. This, I believe, is the point that Kavanagh was making in his article, and is that to which Follett takes exception.

A. M. W. BACON
Senior Consultant
Atkins Planning,
Epsom, Surrey.

Hardware failures

IN REPLY to the letter from I. D. Follett (CW September 30) I suggest he asks a company such as a major bank whether or not they would consider a six hour "normal" hardware failure irrelevant.

As the research quoted in John Kavanagh's article proves, consequential losses depend on the nature of the business, but can be very serious where online systems are involved.

We at UCL consider anything that halts computing, whether temporary or permanent to be a disaster. We have no need to emphasise the dangers — they exist and every responsible DP manager is only too well aware of them. Our only concern is to provide a service for these people who are far-sighted enough to want to be prepared for any eventuality.

S. S. HITCHCOCK

Sales and marketing manager
Unilever Computer Services
Watford.

Bureaux fortunes

AFTER reading the article by Boris Sedacca on results for the UK computer services industry (CW September 23), I must disagree with the statement that the "bureau market figures also show a decline in the straight computer processing operations" and as such "bureaux are less buoyant than the industry as a whole."

Heseltine Business Services has found, through experience, that in this recession there is an increase in the amount of straight computer processing, especially when the price for such processing can be held at a very low level. I can only imagine that this statement refers to the older bureaux who because of their high costs are attracting less business!

N. W. HALL
Heseltine Business Services,
Barking, Essex.

DOWNTIME

Operators reduced to a kneeling position

ERGONOMICS Humbug. Operator comfort? Who cares?

Well, from the scene pictured right, it certainly looks as if Wang does not give much credence to all the hoo-hah concerning such matters. Why is the operator doomed to spend most of each shift on his hands and knees in order to load tapes on the terribly neat device?

Perhaps this scene of torture stems from an over-active ad man deciding that all future Wang kit should conform to the BBC standards for washing machines...

Or perhaps the answer is more simple. A new race of Oriental super-midgets who can work 24 hours a day, seven days a week, but for inscrutable technical

reasons are incapable of reaching normal sized tape decks.

And, it transpires that Wang is so grateful to Prime Minister Maggie Thatcher for help in getting the go-ahead for its new factory in Sirling that it has presented her with a token of its esteem.

A birthday cake, officially described as "giant," has been delivered to No. 10 for the consumption of the Leader.

Chad has not actually seen the said confection, but the use of the word "giant" is a little ominous. If Wang's tape deck ergonomics are anything to go by, the Iron Lady will probably have to stand on Dennis' shoulders to cut the thing.

10 YEARS AGO

FROM COMPUTER WEEKLY OF OCTOBER 19, 1972: Trading in IBM shares on the New York Stock Exchange was suspended for several hours when a submission by the US Justice Department in its long-standing antitrust suit against IBM brought a settlement nearer... Irwin Rector was named as managing director of Burroughs Machines Ltd.

Liveware File
by Don



Operators on their knees. See story left.

Mushroom management

AFTER matrix management comes a new term for everyone who likes to keep one step ahead: mushroom management. It came up recently in a conversation with Modular Technology's flamboyant ex-boss, John McNulty. He reckoned the receiver which took over

his firm in the summer was not filling him in on everything that was happening as his firm was sold to Zygol Dynamics.

"It was a case of mushroom management," he said. "That's where they keep you in the dark and pour blah-blah all over you."

The games they play

IN the wonderful world of computer games, where monsters lurk waiting to drive a million parents bananas as their offspring monopolise the family TV set — thus preventing the grown-ups from playing with Prestel — a catchy name is vital.

No one is going to pay good money for a game called Chartered Accountant or Social Democrats Convention. The ones that sell rejoice in titles such as Death Blast Alien Doomstar Attack, or Tony Benn Meets Anita the Hun.

I asked a colleague for his opinion on two of the new Vic 20 games on offer from Commodore. "Another Vic in the Wall (Groan)." "How about Vicgamon then?" "Doesn't sound kosher to me."

"Groan."

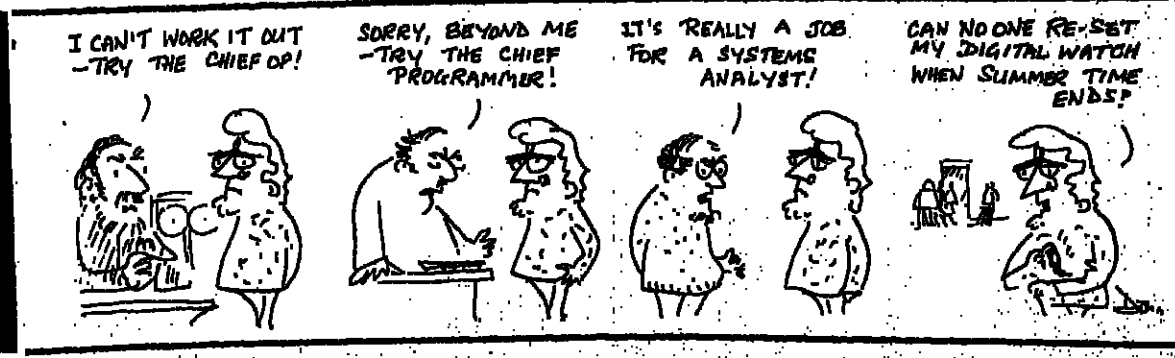


Deafening

THE Swedish inability to detect Russian submarines must point to some fundamental failure of the sophisticated electronic listening bobs which are supposed to sniff out the baddies.

The Swedes have carried out in-depth(?) probe into the entire rassing case, with which Red has can sneak in and out of the waters, and come up with an answer of sorts.

It appears that the problem is in the Scandinavians' inability to recruit sonar operators, rather than any mechanical failure. A spokesman for the Swedish Navy claims that young people's hearing has been so damaged by long exposure to disco music, that they are incapable of hearing (even shouting) up on them.



WORKPLACE

A new film could be the biggest money-spinner since Mickey Mouse — and it's set in a mainframe

That wonderful world of Disney — inside a computer

THIS year's Walt Disney Christmas movie, *Tron*, looks set to be the biggest money-spinner to have come from the studios famous for innovation since 1928, when Mickey Mouse made his debut. The film breaks new ground for Disney in dealing with subjects such as totalitarianism and revolution — inside a computer.

Tron opens in the West End today (October 21) and goes on general release on December 9. In the eight weeks following its US release, the film grossed more than \$30 million, and a video game launched to coincide with the movie has already replaced *Pac-Man* as the most popular in the country.

The writer and director of *Tron* is Steven Lisberger, best known

for his production *Animapalms*. He approached Disney in 1980 with the idea for *Tron*, and the studio gave him the money to produce a demonstration to prove that the sophisticated effects demanded could be achieved.

"We were interested in creating objects and environments that couldn't exist in the physical world. That's something computer-generated images can do very well," says Lisberger.

He had been developing his ideas since 1977, and says the film was always intended to make extensive use of computer graphics. While other movies such as *Star Wars* have made impressive use of computer-generated effects, *Tron* is almost entirely dependent on computer imaging to provide

what Lisberger describes as "a counterfeit reality" — the world inside the computer.

Both objects and backgrounds in *Tron* are computer-generated, and the actors play out their roles in both the real world and inside the large mainframe of a communications company named Encom, where the supervisor program, MCP, has developed ideas above its station and set up a dictatorship under which the applications programs are forbidden to communicate with their users.

Two principal companies are responsible for the computer imaging in *Tron*, California-based Information International Inc (Triple-I), and the Mathematical Applications Group Inc (MAGI) of New York. The two firms used



The hero — a video game expert caught up in an electronic world where the games are for real.

different techniques to achieve the images for the film. Triple-I digitised the designer's blueprints by tracing round the three elevations with a cursor.

The computer is then able to construct a wire-frame structure of the subject which can be manipulated in space. The MAGI technique differs in that it utilises a library of 50 geometric shapes which can be fitted together either additively or subtractively. These building blocks can then be assembled to construct the desired shape.

Each pixel on the computer's screen is assigned a colour and intensity to create the illusion of a solid, three-dimensional object. Multiplying the number of pixels per frame of film — more than two million — by the 24 frames per second at which the film travels, means that for each second of screen time, almost 100 million bits of information are required.

By using computer imaging, rather than relying on hand-drawn pictures, *Tron* was produced in three years, as opposed to the seven that Lisberger estimates would have been required had the film been animated using conventional techniques.

The pre-production phase, where the basic computer images

were created, took two years, the live action using the real human actors a mere two months, and post-production, where the final film was constructed, a further 10 months.

Some of the characters in the film are based on the real-life programmers who were involved in the computer imaging process.

"The actors were introduced to the programmers at an early stage in production," says Lisberger. "It was a valuable insight into both the work of the technicians and to the type of person who becomes a programmer."

This is borne out by the human heroes of the film. They certainly act, speak, and tell the same jokes as the majority of programmers of my acquaintance.

Despite the excellent quality of the computer imaging in *Tron*, Lisberger doesn't believe that the human actor is in any danger of becoming yet another victim of the microchip.

"Computers will replace conventional model shots without a doubt," he says. "But until a digital printer (in the film scene) is perfected, scene simulation won't be feasible. Actors are what I call the ultimate special effect."

See pages 18/19 for a special feature on computers in the cinema industry.

How a DEC machine helped to raise the Mary Rose

LIFTING the Mary Rose from the bed of the Solent called for precision control. Hardly surprising, then, that a computer was involved in the business — a Digital Equipment 11/23 mainframe armed with real time software written by GCS Engineering.

The secret of the software, explains project manager Neil Starsmore, is the combination of modelling based on weather forecasts and tidal predictions, with real time measurements from which statistical tables are produced to help operators with the movements of the crane.

The big problem in the salvage was apparently peak loading caused by a sudden lurch of the floating derrick, the *Tog Mor*, while lifting the Mary Rose.

This can cause a real weight of 600 tons to give a pull of 800 tons, explains Starsmore.

The whole operation can be jeopardised by the arrival of waves propagated from a storm centre thousands of miles away, which is never expected to reach the area. This is difficult to predict, but can be catered for in the model.

The motion of the vessel under given conditions of wave motion, wind and load on the crane can be modelled for periods of 20 minutes, one hour and up to six hours ahead, says Starsmore.

This is vital in a salvage operation that can last for several hours.

The Mary Rose was hanging from the crane tip several hours, during which operators of the equipment were constantly being updated on expected ship movements by the computer system.

MICRO MARKET

France gears up for 200,000 micros by end of the year

Enthusiasm is the only way to succeed in the fast changing microcomputer market, as Jack Gee discovers

BY the end of this year 200,000 microcomputers will be in use in France, according to market specialists. Sales of 70,000 units are forecast for 1982, and the figure is expected to double in 1983.

Thomson-CSF has announced that it will launch its long awaited TO 7 micro this autumn in partnership with Nathan, the publishing firm. Matra has promised to present a rival product in alliance with Hachette, France's biggest publisher.

They will be in competition with CII-Honeywell Bull, which like Thomson is now under State control, and Goupil, a privately-owned company. CII-Honeywell Bull and Goupil are making big inroads into the fast developing French market for microcomputers.

French industry and distributors use the retail price of FF50,000 (£14,000) for a central unit as a yardstick to define a microcomputer, compared with \$5,000 in the US.

The Micral, the first domestically produced microcomputer on the French market, is the result of a decade of research and innovation by R2E, a CII-Honeywell Bull subsidiary. The parent company markets the same machines under the brand name Questar/M.

Launching the group's latest model, the MCI which is based on its well proven Micral 80 series technology, R2E's managing director, Didier Collet, said: "We have solid grounds to expect to be among the dozen or so world manufacturers of microcomputers who will really matter by 1986."

Market research by R2E and CII-Honeywell Bull has shown that French micro shops deal with many potential customers who hesitate to buy because they are not convinced that data processing is a reliable technology.

In order to monitor users' reactions and solve their problems as they arise, the first of the new Micral series are being installed in the Paris area. Sales will be extended to most of France by the end of this year.

The retail price of the Micral in France ranges from FF24,125 excluding tax (£2,045) for the 2 x 300K Model B to FF26,150 (£2,215) for the 2 x 700 K Model C. These prices include CP/M software and the Basic programming language.

Collet said: "At R2E we regard ourselves as very different from the well-known multinationals. 'We behave differently. This explains our success on the international market and particularly in countries which are only just entering the industrial era.'"

He added: "Our role is to supply the necessary tools to big and small firms. Instead of seeking the highest profits for ourselves, we try to improve those of our clients. That way our clients become our partners."

Collet complained that French manufacturers of microcomputers are the victims of unfair discrimination in the country's Customs duties. While a French importer of microcomputers pays only 8% import duty, a French manufacturer pays 18.6% duty on the basic electronic components. He pointed out: "This bonus for foreign equipment is contrary to the government's appeal to us to conquer new markets."

The Micral microcomputer series is composed of two families, the Series 80 and the Series 2. The single position Micral 80/21 has a screen with 1,920 characters, a 64 Kbytes memory and a twin unit of floppy discs of 140, 256 or 600 Kbytes.

A 600 Kbytes floppy disc unit can be replaced by a fixed 5¼-inch minidisc with five million or 10 million characters.

The single position Micral 80/22 was developed for the French Ministry of Education. It has a 1,920 character screen, 64 Kbytes memory and a special keyboard for use with a simulated training language.

The Micral 80/31, also a single position model, has a 64 Kbytes memory and a double floppy disc unit of 140, 256 or 600 Kbytes. The 600 Kbytes unit can be changed for a fixed 5¼-inch floppy disc unit with five million characters.

The Micral 80/55 is a multiposition microcomputer with a Z80 8-bit processor and a 64 Kbytes shared memory with 32 Kbytes for joint memory and 32 Kbytes for each work position.

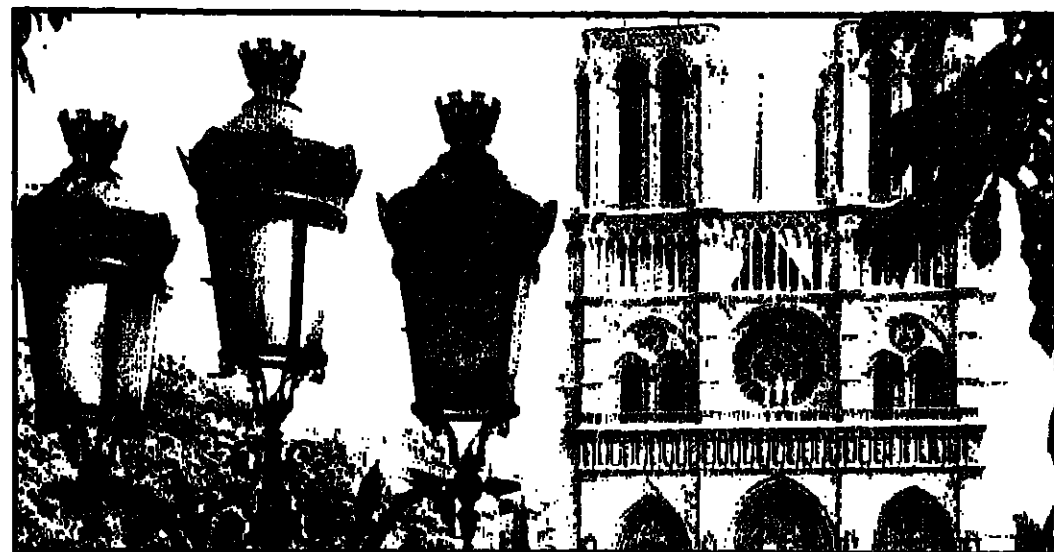
Micral sold by CII-Honeywell Bull and R2E face strong competition from Goupil, the brand name of a successful microcomputer launched in France by Société de Microinformatique et de Télécommunications (SMIT). This firm was set up in 1979 as a partnership between Micral and the French National Centre for Telecommunications Studies.

At the outset SMIT announced that its objective was to launch a microcomputer for the mass mar-

ket at a competitive price. The Goupil 2, at FF7,000 (£560) for the basic model, offers the operating systems DOS FLEX, UCSD and CPM, and can be equipped easily with an intelligent terminal and videotex facilities.

Goupil microcomputers are offered with Basic, Fortran, Assembler, Pascal and Forth as well as with a wide range of software and a Voltaire word processing package.

Georges Zimeray, president of Sonotec, one of France's biggest microcomputer distributors, said:



Paris has been chosen for user trials of the new Micral micro, marketed by R2E and CII-Honeywell Bull.

"This is a market where everything moves at breathtaking speed. I understand why the public cannot keep up with the rapid rate of change. Firms like mine have a duty to give people quick and straightforward answers to their questions about data processing technology."

Sonotec made a big contribution to Apple's success in France, where the US microcomputer's sales have risen from 300 in 1979 to 7,000 last year.

To obtain exclusive sales rights in Zimeray's stores Apple pro-

posed a merger with Sonotec. But Zimeray insisted on staying independent: "I had my own ideas about the responsibilities of French firms. So I turned down this attractive offer, broke with Apple and broadened the range of microcomputers which I was offering to my customers," he explained. "In this way I can enjoy freedom of pressure from the manufacturers and give the public a wide choice of hardware and software to meet their individual requirements."

The break with Apple has certainly not damaged Sonotec's prosperity. Its turnover rose from 10 million francs in 1978 to almost 100 million francs last year. Zimeray looks forward to an even better performance in 1982.

Confident in the development of France's microcomputer industry and of the appetite of the consumer market, Zimeray added: "You have to be passionately keen on microcomputers. That is what I discovered when I first went to Japan. Enthusiasm is the only way to succeed. There is no other recipe."



NEW SICK PAY LAWS — THE ANSWERS

Fully-tested, top-value, one-day conferences

THE PROBLEMS

From Wednesday April 6th, 1983, every employer will be obliged to undertake financial and administrative burdens in respect of every significant instance of employee absence.

The complex rules will require informed assessments from: Chief Executives, other Senior Administrators, Internal Accountants and External Auditors, and Computer Advisors and Bureauaux as well as personnel and IR executives.

Incorrect decisions on such matters as qualifying days could cost large organisations hundreds of thousands of pounds. Internal sick pay schemes may have to be "topped up" considerably.

In short, from April 1983, systems and records for notification, exclusion, withholding, transfer, sickness absence control, entitlement calculations, daily offsetting calculations, payments and recovery will all be subject to inspection and audit. Criminal penalties can result from failure. Expensive employee appeals will result from inadequacies.

WHAT THE CONFERENCES ACHIEVE

Devised and developed by IRB over two years, these courses not only explain the SSP law but provide practical solutions to the real problems - how to operate SSP hand in hand with company sick pay schemes and how to develop sickness arrangements that meet statutory standards while providing optimum financial, management and employee-relations benefits.

No other organisation has done the work required to identify the problems and find the variety of practical solutions allowed. Hundreds of employers have saved weeks or months of work by attendance at these IRB courses. Thousands more will benefit from these IRB courses before the end of the year.

WHERE AND WHEN

LONDON	November 18;	or	December 10
MANCHESTER	November 18;	or	December 8
GLASGOW	November 15;	or	December 16
BIRMINGHAM	November 17;	or	December 9

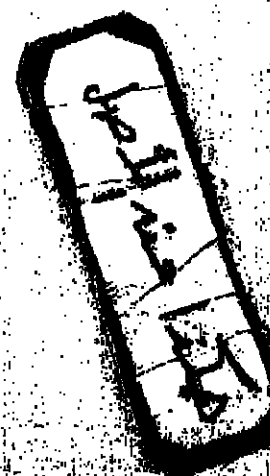
COST

A single place costs £115 + VAT.
Multiple-place rates, exclusive of VAT are:
£105 (2-4 places); £95 (5-9 places); £85 (10+ places).

HOW TO BOOK

You can book by Mail, Telex or Phone. Just identify the required number of places for your selected dates and venues and provide the delegates' names and job titles for each fixture.

Book through IRB, Silvertown, Exeter, Devon, EX5 4HZ.
Telex 42518 SSP
Phone 0392 880991.
giving your organisation's title and address and the name of the executive making the booking and identifying the number of places and venues.



PUZZLER



IN this week's dissection problem, you are asked to cut this shape into just two pieces that will fit together again to make up a perfect square (neither piece is to be turned over). See page 53 for solution.



LISBERGER... "Computers will never replace actors."

Institute for Software Engineering



COURSE PROGRAMME - AUTUMN 1982

Getting Started in Capacity Management	2 - 5 Nov	Munich
Software Physics and Capacity Management	15 - 19 Nov	Milan
	22 - 26 Nov	Munich
Standard Costing for Capacity Management	15 - 19 Nov	London
Equipment Planning and Configuration Design	4 - 8 Oct	London
	15 - 19 Nov	The Hague
Predicting Throughput, Response Time and Utilisation	18 - 22 Oct	Rome
	8 - 12 Nov	London
Capacity Management Workshop	29 Nov - 1 Dec	London
Introduction to IMS Performance Management	4 - 8 Oct	Frankfurt
	1 - 5 Nov	London
	13 - 17 Dec	The Hague
Introduction to Capacity Planning and Modelling	18 - 19 Oct	Munich
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The independent auditor

Les King continues his series on changing job functions and titles.

COMPUTER systems audit and user training have one thing in common.

Despite almost universal agreement as to the value of these functions, very few organisations actually employ anybody to carry them out.

It seems to me that when most computer systems go live, users are given a pile of documentation with the instruction to "Get on with it mate", and any on-going review of systems effectiveness is done purely by response to complaints.

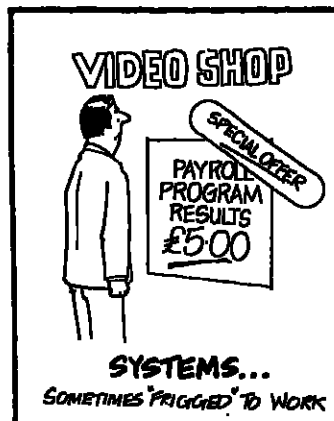
Surprisingly, it is the supposedly bureaucratic organisations, such as major banks and public authorities, that seem to lead the way in the development and use of formal "quality assurance" methods.

In such organisations, the concept of continuous financial auditing is well-established and computer audit, which uses similar techniques, is frequently a spin-off activity undertaken by accountants with computer knowledge rather than by full-time DP professionals.

The essential task of the computer systems auditor is to provide an independent assessment of computer systems usage making appropriate recommendations for improvement in control, efficiency and security.

The job embraces all aspects of computer systems usage, including technical resources, and not just the monitoring of financial areas which would tend to be the case with conventional, non-computer auditing.

In the early stages of systems



development, the systems auditor will ensure that proper controls, such as batch totals and record counts, are included to detect loss and corruption of data.

Another area of concern is the control of access to information and, in particular, the prevention of theft or misuse of data through the unauthorised manipulation of the computer system.

The independent status of the systems auditor prevents any direct contribution to the systems design, a major problem for anybody with a tendency to waste in and "show how it should be done."

Once a system has been developed, the systems auditor will become involved in acceptance testing with a view to making sure that the system produces results in accordance with the agreed user specification.

As with systems design, the au-

ditor will not actually start producing his own test data at this stage, but will instead satisfy himself that valid and comprehensive testing has been carried out.

It should be pointed out that the systems auditor does not make a comprehensive study of every single system but, as with financial auditing, tends to work on a "sampling" basis undertaking more detailed investigation of critical applications or where sampling techniques indicate problem areas.

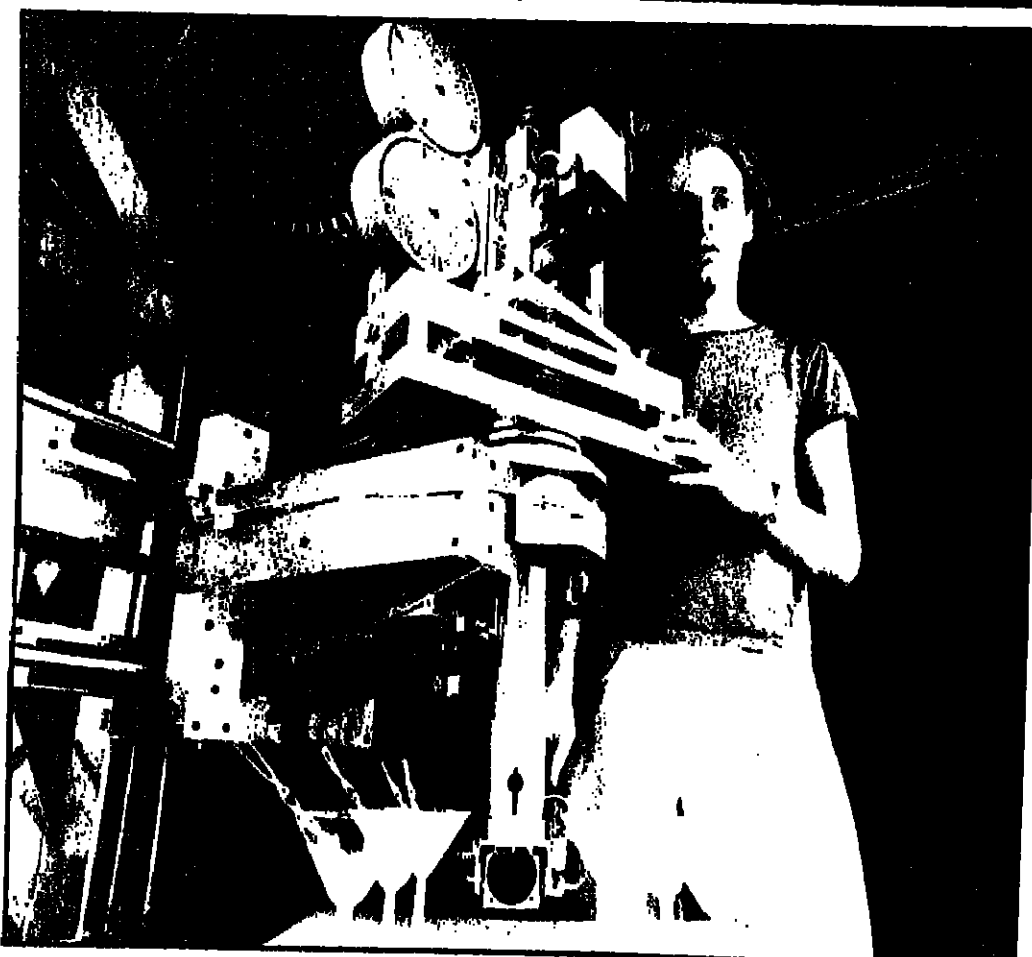
When systems are live, they are monitored on an on-going basis with the auditor tracing sample transactions using software tools, such as NCC Filetab, to examine data directly rather than relying on output which could well have been "friggled" to give the appearance of working correctly.

Another technique for detecting unauthorised changes is to dump a few object programs and compare them with current versions a few months later although this usually highlights sloppy documentation rather than fraud.

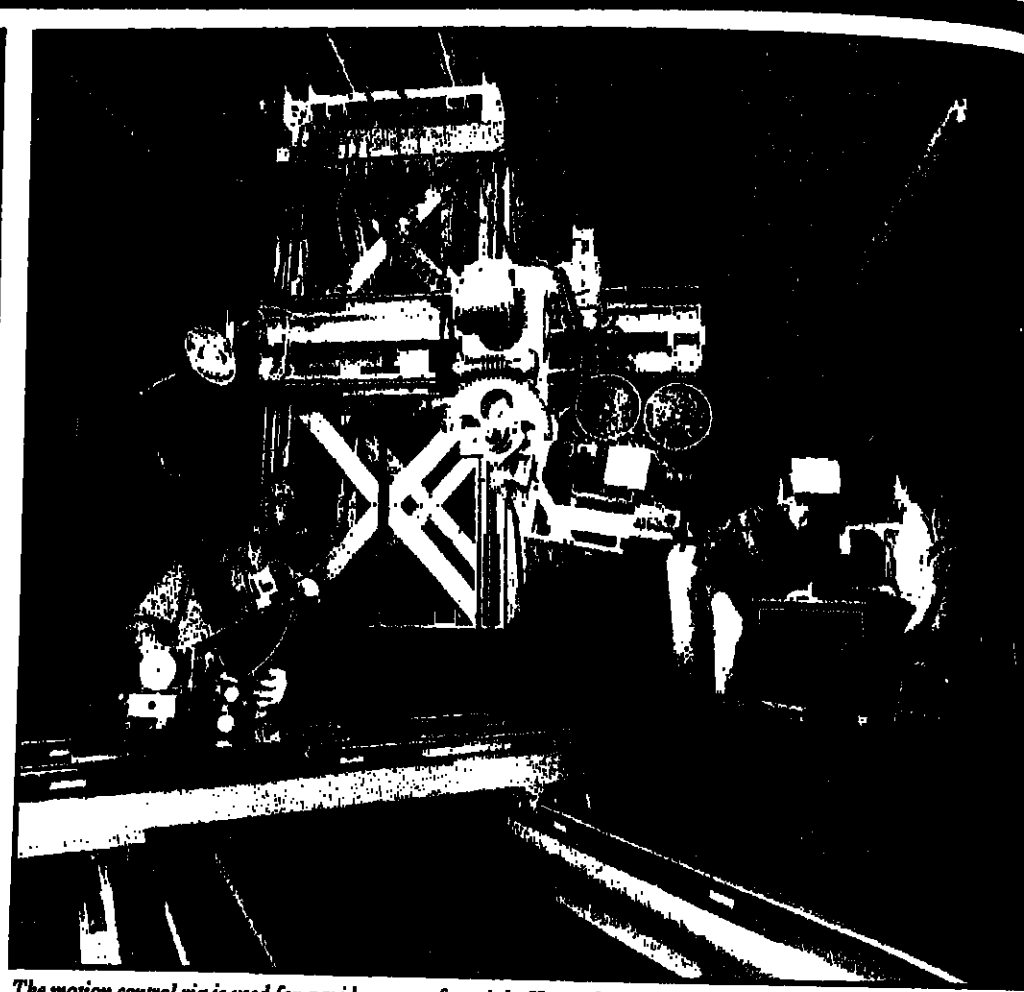
Physical security is also a major area of interest to the systems auditor who will require appropriate contingency plans, for back-up and recovery, to guard against a major disaster such as a fire or flood.

The monitoring of efficiency is largely a matter of making sure that systems work without causing undue user bottlenecks, although the auditor may well investigate the use of technical resources such as data preparation or the performance of operating systems.

Workplace is compiled by Philip Hunter and Andrew Thomas.



Andrew Berend and the motion control rig with snorkel lens for low-level shooting attached.



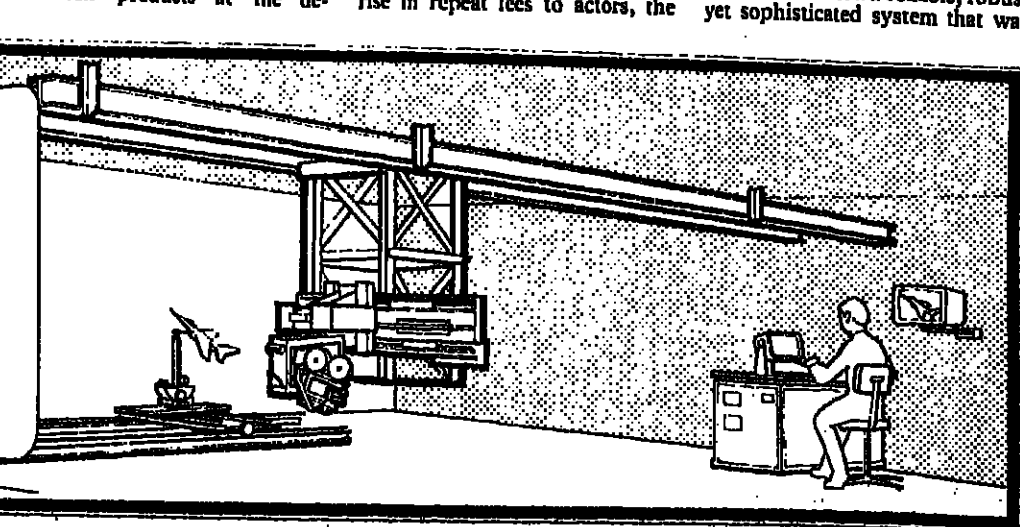
The motion control rig is used for a wide range of special effects which might otherwise be impossible.

The use of technology to very special effect

With the success of films like *Star Wars*, special effects are in big demand, and computers play a vital role in new approaches to graphics on the screen

Computer animation is ideally suited to the stylised demonstration of new products — both simple and complex. Thus the product became the hero of the commercial.

computer named Whirlwind-1 at Massachusetts Institute of Technology, was used to generate simple pictures.



The computer controls a model mover to create many different movements — spin and tilt, for example.

development stage, to see how they would look without the need to build costly models. Massive funds were applied to make computers accept 3-D images and move them around, even fly them through the air or drive them down a computer generated street.

Then, in the late Seventies, 3-D computer animation received a huge boost from a relatively unexpected quarter. Steeply rising film production costs had already caused the major US advertising agencies to move into the field of videotape, first for post production and then more and more as the originating medium for their TV commercials.

At the same time the rapid development of video technology had introduced advertising agencies and their clients to the possibilities of high technology when applied to the film-making process. Among the innovations were computer controlled editing suites, digital effects generators for instant special effects, and chromakey for instant matting — a sophisticated technique whereby different images can be combined in startlingly effective ways.

When a revision of the US Equity agreement resulted in a hefty rise in repeat fees to actors, the

advertising agencies looked around for ways of making TV commercials without people — and they looked to technology for the answer.

As a result they stumbled into the world of 3-D computer animation. For them it seemed a technique sent from heaven. It could be used to give their commercials a prestigious "hi-tech" look that reflected favourably on the product.

And, just as General Motors and Lockheed had discovered many years before, computer animation was ideally suited to the stylised demonstration of new products — both simple and complex. Thus the product alone could become the hero of the commercial and, of course, the product did not ask for repeat fees.

Soon 3-D animation commercials were sweeping the awards in the US, and production companies which had depended for their survival on occasional special effects sequences for science-fiction epics were working 24 hours a day, seven days a week.

When the Moving Picture Company decided to develop its 3-D computer animation system, it bought Hewlett-Packard hardware because it offered a reliable, robust yet sophisticated system that was

genuinely "user-friendly" — a term MPC's designers had previously heard applied to several systems that seemed about as friendly as a mad dog.

MPC bought the basic software in the US from a well-established production company, amending and developing it in London to meet its particular needs. That left only the problem of outputting.

The solution combined computer technology with the latest techniques in fibre optics — "painting" the image directly on to 35mm film via a computer-controlled fibre optic light source.

Using several layers or cells of animation, each separately coloured and drawn object can be made to travel through 3-D computer generated environment. Match-mixing computer animation to live action is a well-established technique, enabling 3-D objects to turn into the real objects they represent and vice versa. By using the extensive video special effects equipment of a company like MPC, the combination of live action with computer animation can be made infinitely more sophisticated.

For example, with the help of Ultimate, the advanced chess key system, a real person can walk down the pavement of a computer image city, get into a computer-generated car and drive away. Linked to Ultimate, or a digital effects generator such as Quantel, the creative potential of combining computer animation and live action is considerable.

Berend also advocated the introduction of motion control which should more correctly be called "The computerised control of the motion of film cameras, video cameras, film projectors and models".

The aim is to be able to use a

Turn to page 19



RELICK: "MPC decided to dive in at the deep end."

Complex effects are the order of the day

From page 18

multiplicity of special effects techniques to achieve complex and dazzling special effects. Previously big motion control rigs were available only in the US, and were used to achieve nearly all the sophisticated special effects sequences in the recent surge of special effects films such as *Star Wars* and *Blade Runner*.

The camera is put on a geared head similar to, but more flexible than, that used for live action shots. This is placed on a dolly which runs on tracks, again similar to but more flexible than those used for live action. In the case of MPC's rig, the rails are mounted on the ceiling and the dolly hangs from the rails.

The rig is controlled by a computer. The movements the director requires must be entered into the computer. Start in position A, move to position B over two seconds or 50 frames. Go on to position C panning through 20 de-

Work that would have taken months can now be achieved sometimes in hours

grees, move to position D and tilt down.

Although this sounds complicated, it isn't. The motions can be "jockeyed through" in a very similar way to a crane driver driving a large crane on a building site.

First, the moves are "jockeyed through" slowly with various changes, critical positions being checked, and so on. When the director is satisfied with each part of the move, it is entered into the computer memory. When the whole move for a shot has been determined, the end result is that the computer has in its memory every move, pan, tilt and timing.

The computer is then instructed to put the camera in its first position. When the director hits the go

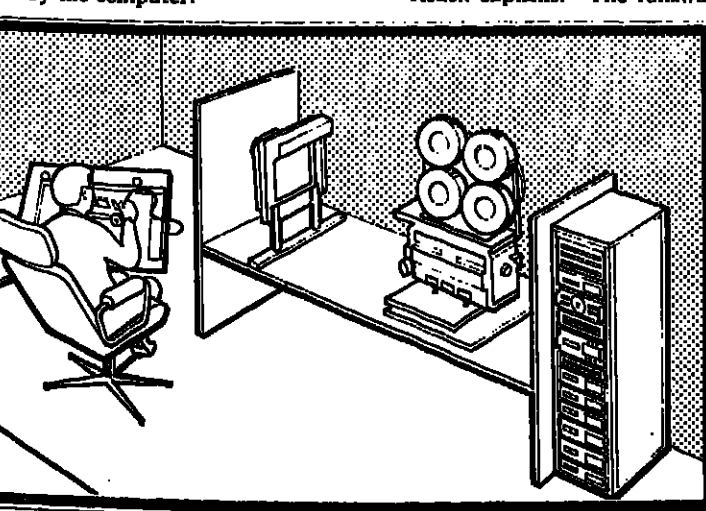
button, the computer controlled rig and camera duplicates exactly every move in normal running time.

If, as is usually the case, a film camera is being used (the rig can be used for film or video) a video camera is attached to the film camera's viewfinder to enable everyone to see the whole shot. Changes or modifications can be made then if required.

The computer simultaneously controls a model mover. The model is mounted on a stick, which is later rendered invisible by lighting, ingenious positioning or by one of several special effects techniques. The stick is mounted on a geared head, the geared head is mounted on rails on the ground.

The model can therefore be made to track, spin, pitch, yaw, tilt and so on in a precise and smooth fashion after its movements have been entered into and remembered by the computer.

Relick explains: "The runaway



Computer graphics links man and machine in creative endeavour.



In the post-production suite, effects are added using videotape techniques.

A laser disc got MPC on the move

THE FIRST big break for the Moving Picture Company's special effects unit came courtesy of Philips and the advertising agency J. Walter Thompson. Mike Gil-mour, JWT's head of television, bravely gave MPC its head to produce the demonstration disc for the Philips Laservision system.

One side of the demonstration disc is a six-minute programme showing the ease of operation and outstanding features of the player, also produced by MPC. On the other side is a four-minute sequence of an altogether different nature introducing the range of programmes and feature films available.

For this Philips wanted to have something exciting, innovative and completely original. Together with the creative team from JWT, designer/director Bill Mather designed the most complex piece of special effects work yet undertaken by MPC.

It incorporated almost every imaginable type of special effects technique. Most of the principal photography was shot on film including the computer imaging and motion control sequences with the complex post-production work being done on videotape using up to six computer-controlled videotape recorders simultaneously.

The opening shot is of a model city built to simulate a circuit board with silver strip roads and

chips and microcircuit "buildings". The most powerful chip on the board is, of course, the Philips logo, and as the camera tracks in to close up, the futuristic Philips silver video disc spins away from it.

The disc levitates and a computer graphic of the player forms around it. The camera explores the inside of the computer-imaged player and follows the internal electronics of the device as a laser beam sears through the picture and hits the underside of the disc to demonstrate how the pictures are generated.

The production resulted in some major redesign of the equipment, and a lot of new production business.

Although a test film for Nikon produced perhaps some of the most outstanding computer graphic images, the most interesting and challenging project to date was the Sensodyne toothbrush commercial which has been put on the air recently.

It starts with an image of a computer graphic toothbrush which transforms itself into the real thing. The real toothbrush then brushes computer-imaged teeth. Throughout the commercial, computer graphics, conventional animation techniques and motion controlled live action are cleverly combined using a combination of film and videotape optics.

Big news for everyone selling computer products and services to the Middle East

We've opened up the Gulf!

The arrival of IPC's unique new publication, Middle East Computing, means nothing less than that.

For the very first time, computer users in the rich Gulf States — and throughout the Arab world — have a regular journal of reports on the technology and services available to them, world wide.

So now you can talk direct — and direct — to potential customers throughout this vast, fast growing market. (A market which imported more than £74,000,000 worth of computer hardware alone in 1980)

How we've done it

Middle East Computing began as a single-issue publication, backing the Gulf Computer Exhibition and Conference at Dubai last December. Its enormous success revealed such an urgent and widespread demand for computer product information that it is now published regularly.

6000 copies are being sent to established computer users or key personnel within government and major business organisations. In the Middle East countries predominant in the computer market. This circulation was compiled through the full research resources of Computer Weekly and IPC Business Press backed by contacts made at the Gulf Computer Exhibition.

Middle East COMPUTING

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COMPUTASTARS EUROPEAN FINALS



Britain's DP athletes romp through rain to take the firsts

by Andrew Thomas

THE 1982 European finals of Computastars, where the best 36 teams from Britain, Belgium and the Netherlands battled it out in the splendid surroundings of the Belgian national stadium at Heysel, north of Brussels, were dominated by British teams, and Kalamazoo in particular.

Both the men's and women's team titles went to the Birmingham-based company, but Bob Kinch of Legal & General pushed Kalamazoo's Jeff Harrison into second place in the men's individual competition. The women's champion was also from Legal & General - Anne Bragg.

One thing that competitors can be sure of is that there will always be a steepchase in Computastars - no organiser Gordon Cairns decided not to have one! A 1,500

metre relay replaced it in the programme, proving that few things are guaranteed in this life - except rain at Computastars events.

The day started with the shot putt. Susan Richardson of Digital GB beat Hasiena de Vries from CMC Holland, Elizabeth Porter from Barclays Bank UK, and Fanny Zevenheek of Centraal Beheer, into joint second place.

Kalamazoo women started well, winning the shot from Barclays, and the Dutch made a good start, with the Digital men's team beating Commercial Union UK. Legal & General's Bob Kinch shared the individual honours with Marcel Rigsbergen of Digital NL.

Event two involved football dribbling for the women, and hockey for the men.

Kalamazoo women were among those who found the football rather tricky, and Digital NL won the team event from Barclays, who moved into the overall lead after two events. The individual winner, Blanca Litjen, was also from Digital.

The hockey stick-wielding men from Kalamazoo took the team event to move into the lead, and Philips saw its Number One, Roel ter Weel, in lights on the master scoreboard as he took the individual title.

But Bob Kinch took joint second, and thus held on to the lead with Marcel Rigsbergen of Digital NL. Kalamazoo's Number One Jeff Harrison almost took the individual lead from Kinch with a fine performance in the basketball, but again the honours were shared, with Dutchman Piet Walraven of Swets en Zeitlinger tying for the basketball championship. Kinch finished second to hold on to the overall lead by the slender margin of one point.

Dutch team Arc Automation Services proved to be the best basketballers, but their win only moved them into eighth place in the men's league. Kalamazoo's holding on to their lead with second place. Kalamazoo took the women's competition, to move up one place overall to number two,

and Hasiena de Vries of CMC Holland took the individual honours.

The last event before lunch was the vaults. Due no doubt to their experience in the vaults, the Barclays Bank women beat Legal & General into second place, and pulled out a nine-point lead over second overall Kalamazoo.

But the Kalamazoo men provided consolation for the company by winning the men's heat. After four events they had built up a commanding 23-point lead over Digital Holland. Rowntree Mackintosh's Number One Mike Hawtree took the individual first to move up to 10th place overall.

After the break came the 100 metres. Bob Kinch fulfilled the promise of his earlier performances and won the event outright, knocking Kalamazoo's Jeff Harrison from the No 1 spot. But Harrison's team was not to be removed from the overall lead, and Susan Richardson of the Digital Brits moved from third to second overall with an individual win.

The next event for the women,

the sprints, saw victories for Legal & General and a three-way tie for the individuals went to Anne Bragg, Alison Grant and Blanca Litjen. Meanwhile, the men were involved in the football with successes for Mike Hawtree and Rowntree Mackintosh.

The final placings were decided by the 1500 metres relay. Commercial Union and their No 1 Lesley Davis took the male trophies, and Legal & General and Anne Bragg the female.

Meanwhile, the visiting Inland Revenue tug-of-war team, the Worthing Rams, were the surprise losers in the final to the Dutch team from Computing Associates.



An all-UK line up on the winners' rostrum. Kalamazoo 1 flanked by second-placed Rowntree Mackintosh (left) and Commercial Union.

The sponsors of the final, Dutch systems house Resack, were suitably impressed by the standard of the competition to pledge their support for Computastars 1983.

How they finished

MEN'S TEAM RESULTS												
Rank	Name	Results									Total	
1	Kalamazoo 1, GB	27	34	37	34	36	33	23	42	266		
2	Rowntree Mackintosh 1, GB	33	29	32	26	24	45	34	36	250		
3	Commercial Union, GB	29	22	36	20	34	33	24	45	243		
4	Legal & General, GB	26	23	26	33	26	34	32	30	240		
5	Barclays Bank, GB	23	24	27	26	33	39	28	24	234		
6	NPI, GB	27	29	16	24	38	21	23	39	217		
7	Swets en Zeitlinger, NL	25	22	29	23	27	24	26	30	206		
8	CMC, GB	28	30	21	29	34	12	16	33	203		
9	Sheffield Insulating, GB	22	26	30	26	24	21	31	21	201		
10	Kalamazoo 2, GB	12	19	25	28	28	39	20	27	198		
11	Philips, NL	22	25	26	24	28	21	29	21	196		
12	Digital, NL	32	27	26	25	23	12	18	27	190		
13	Rowntree Mackintosh 2, GB	21	25	23	22	18	36	23	18	185		
14	BSO Apeldoorn, NL	22	10	37	25	24	27	23	18	186		
15	Barclays Int. GB	23	25	23	25	22	12	14	42	185		
16	ARC Automation Svs. NL	21	20	38	22	26	21	13	21	182		
17	Rendek, NL	9	24	23	23	20	36	20	18	173		
18	Janssen Pharmas, B	16	18	25	29	21	18	17	24	174		
19	Burroughs, NL	19	20	22	21	21	21	17	27	170		
20	Catorpillar, B	22	23	28	21	21	21	21	12	169		
21	Informaticum, NL	19	19	27	24	25	18	28	6	168		
22	Consulting Ass. NL	22	19	20	20	25	21	27	6	160		
23	ADP Benelux, NL	24	21	32	18	16	12	10	18	157		
24	Data General, NL	16	19	25	10	14	21	20	12	157		
25	Digital, B	11	5	26	14	18	15	14	12	155		
26	Control Data, B	12	11	15	17	19	6	10	18	145		

MEN'S INDIVIDUAL RESULTS														Total
Rank	Name	Results												
1	Bob Kinch (Legal & General)	12	12	12	9	13	12	12	10	10	9	10	9	92
2	Jeff Harrison (Kalamazoo)	11	11	11	11	9	11	5	14	8	10	10	10	82
3	Mike Hawtree (Rowntree Mac.)	5	11	6	12	8	15	13	12	8	10	10	10	78
4	Roel Ter Weel (Philips)	6	15	12	10	9	7	12	7	7	10	10	10	78
5	Dave Cross (NPI)	11	11	2	4	11	7	12	13	13	10	10	10	76
6	Lesley Davis (Comm. Union)	5	1	12	8	11	11	12	15	7	10	10	10	75
7	David Cane (Barclays Bank)	5	11	10	8	10	13	9	8	8	10	10	10	74
8	Malcolm Shuttleworth (Kalamazoo 2)	7	10	11	9	10	13	5	9	7	10	10	10	74
9	Piet Walraven (Swets)	7	7	13	8	10	8	10	10	10	10	10	10	73
10	Michael Milne (Sheffield Insulating)	5	11	10	11	8	7	10	7	10	10	10	10	69
11	Marcel Rigsbergen (Digital)	12	12	10	10	7	4	3	9	6	10	10	10	67
12	Steve Viney (CMC)	6	9	11	9	12	4	3	11	10	10	10	10	65
13	Ben de Bree (Burroughs)	5	7	8	10	9	7	9	9	10	10	10	10	64
14	Veteran Team (Rowntree Mac.)	6	7	7	7	7	12	9	6	6	10	10	10	61
15	Patrick Vijverman (Caterpillar)	19	9	9	7	7	7	8	4	6	10	10	10	61
16	Roeland Meulen (Janssen)	4	6	13	10	7	6	5	8	6	10	10	10	59
17	Rick Meyerinck (ADP Ben.)	8	8	10	8	7	4	6	6	6	10	10	10	57
18	Michael Box (Rendek)	2	7	7	6	7	12	9	6	6	10	10	10	56
19	Huib Groenman (BSO Apeldoorn)	8	1	12	9	8	9	2	6	6	10	10	10	55
20	Hugh Nicholls (Barclays Int.)	5	9	6	10	7	4	2	14	2	10	10	10	55
21	Cees Westerlaan (Comm. Ass.)	6	1	7	10	11	7	10	10	10	10	10	10	54
22	Jan Van Duren (Arc Aut.)	4	7	10	6	10	7	3	7	7	10	10	10	54
23	Veteran Team (Data General)	4	8	10	2	7	7	7	9	10	10	10	10	48
24	Jack Wijngaarden (Inf'kum.)	9	1	7	5	10	6	8	2	4	10	10	10	42
25	Paul Eysendeyck (Digital B)	4	1	9	7	6	5	6	4	4	10	10	10	42
26	Ewen Michael (Control Data)	3	5	5	2	6	2	6	6	6	10	10	10	31

WOMEN'S TEAM RESULTS													Total
Rank	Name	Results											
1	Kalamazoo, GB	30	18	39	32	36	45	29	39	268			
2	Legal & General, GB	25	17	37	38	34	30	35	45	257			
3	Barclays Bank, GB	26	25	36	41	29	27	26	27	219			
4	Digital, GB	23	17	27	24	36	39	26	27	193			
5	Centraal Beheer, NL	21	22	31	26	25	21	22	21	173			
6	Digital, NL	23	26	21	20	15	27	24	21	173			
7	Control Data, NL	24	11	30	18	26	12	24	21	166			
8	Control Data, B	21	7	20	25	22	18	27	24	164			
9	CMC, NL	17	17	33	15	21	6	20	27	156			
10	Digital, B	10	11	23	9	16	12	9	6	96			

WOMEN'S INDIVIDUAL RESULTS													Total
Rank	Name	Results											
1	Anne Bragg (Leg & Gen)	7	10	13	13	14	10	12	15				
2	Susan Richardson (Digital GB)	10	10	12	7	15	13	10	9				
3	Alison Grant (Kalamazoo)	7	3	13	11	10	15	12	13				
4	Fanny Zevenheek (Centraal Beheer)	9	8	11	12	8	7	8	8				
5	Joke Dijkgraaf (Control Data NL)	5	9	13	8	12	4	10	7				
6	Elizabeth Porter (Barclays)	5	9	10	14	8	9	8	9				
7	Blanca Litjen (Digital NL)	7	12	7	9	2	9	12	7				
8	Marlene V'Hoedenaghe (Control Data B)	8	4	2	12	8	6	10	8				
9	Hasiena de Vries (CMC NL)	9	1	15	4	7	2	8	5				
10	Sabine Provost (Digital B)	6	1	6	3	7	4	5	2				

Events are, from left to right, shot, hockey/football, basketball, vaults, 100 metres, football/hockey, sprints, 1500 metre relay. Results were produced on Commodore equipment.

COMPUTASTARS EUROPEAN FINALS



Alison Grant of the victorious Kalamazoo team finished fourth in the sprints.



Bob Kinch of Legal & General holds the individual trophy aloft as Jeff Harrison and Mike Hawtree applaud.

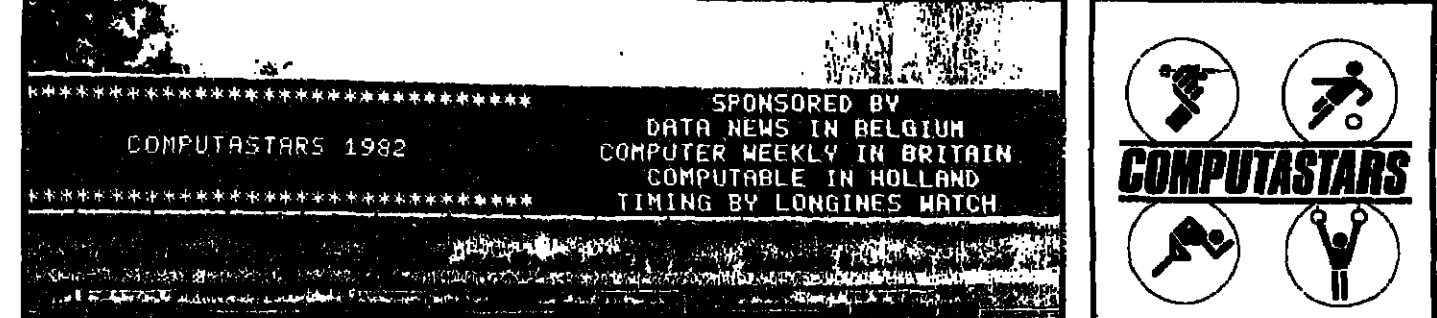


Leslie Davis of Commercial Union winning his heat of the 100 metres.

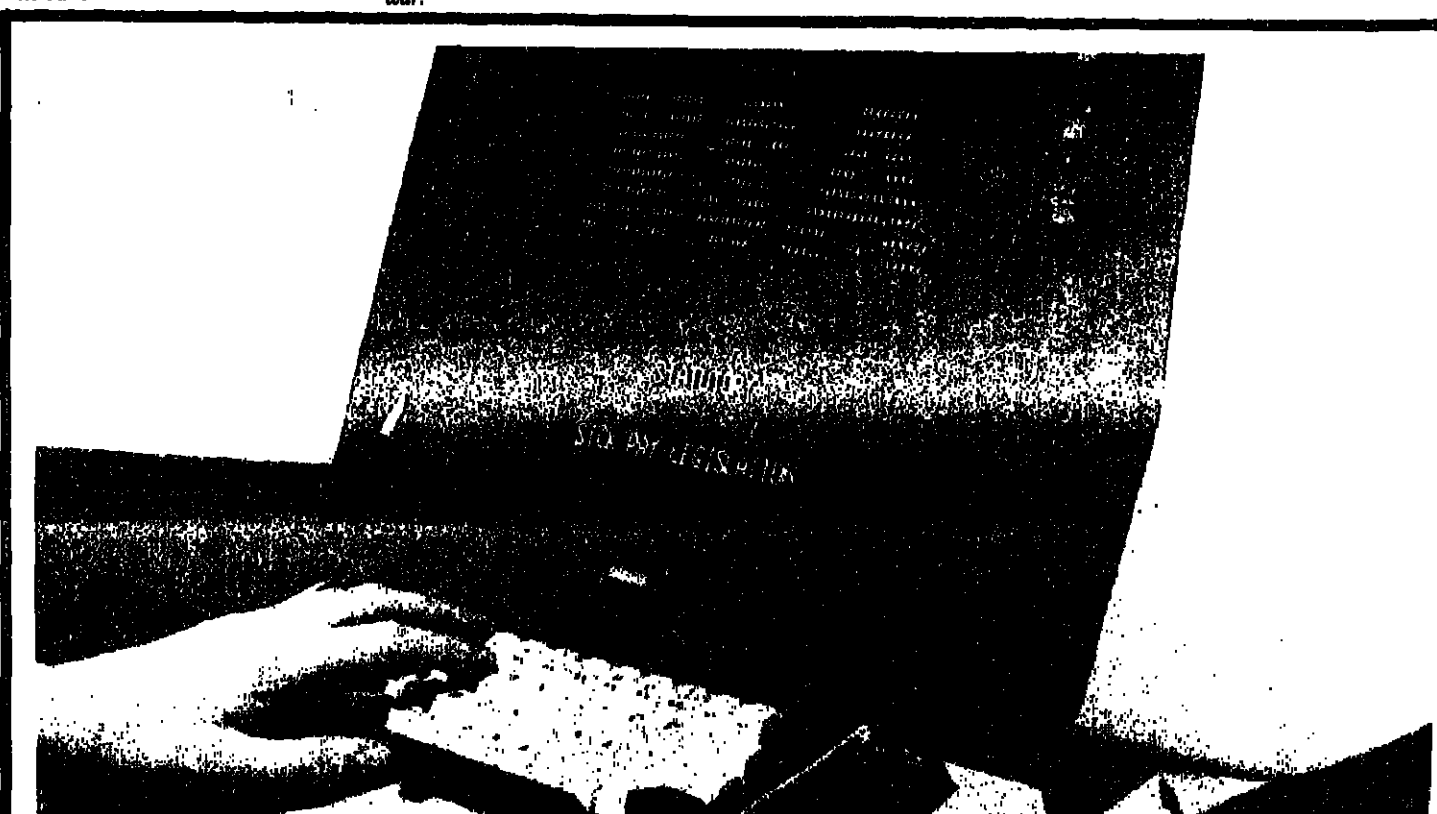
European finalists

BELOW is a list of all the competitors. Team capitals are denoted with an asterisk.

WOMEN
 Digital (GB): Susan Richardson*, Deborah Bouch, Fiona Nicholson, Susan Dawson, Carol Bouch.
 CMC (NL): Hasiena de Vries, Wilma Blom, Sylvia Spruijt, Rita Vries, Trudy van Marum.
 Digital (NL): Blanca Litjen, Margot Jansen, Michelle Jansen, Rita Vries, Anita Witteboer.
 Barclays Bank (GB): Elizabeth Porter, Nicola Farthing, Lindsay Hayward, Jean Marguery, Walle, Michelle Sablon, Christine Pearce, Christine Pearce.
 Kalamazoo (GB): Alison Grant, Christine Atherton*, Andrea Robinson, Julie Walskelen, Sue Wright.
 Control Data (GB): Marlene V'Hoedenaghe, Danielle Simon, Noelle Gelin, Karen Smith, Cecile Selzer (NL), Fanny Zevenheek, Rita Vries*, Anita Pries, Marja v.d. Veger, Gerda Walskelen.
 Control Data (NL): Joke Dijkgraaf*, Irene van der Kooij-Meijer, Rita van Bree-Schaveld, Betty Legal & General Assurance, Anne Bragg*, Viora Edwards, Ann Fish, Susan Blason, Maandy Smith.
 Sheffield Insulating (GB): Michael Milne, Keith Whitaker*, John Whaling, Mark Warren, Stephen Watson.
 Informaticum (NL): Jack Wijngaarden, Hans van Veen, Hans van der Meulen, Rita Zaki, Glib van der Wal.
 Data General (NL): Danny Franchot, Martin van Boven, Nico Blom, Fred Biele, Wim Smits.
 Rowntree Mackintosh 1 (GB): Mike Hawtree, Tony Pratt, Andy Johnson, Tony Pratt, Andy Johnson.
 Rowntree Mackintosh 2 (GB): Maryn Scott*, John Condon, Peter Allen, Alan Kallan, Peter Rader, Richard van Rossum, Huub de Bie, Fred van der Linden.
 Barclays Bank (GB): David Cane, Johnathan



The Dutch team from Consulting Associates pulled off a surprise victory over UK visitors Inland Revenue in the tug-of-war.



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The Exhibition reaching people building with microcomputers

MICROSYSTEMS'83

PRODUCTS

Enclosure cuts noise 'by 95%'

IN many countries it is now law that noise levels in the office must not exceed 55dBA. A typical daisywheel printer attached to a word processor will generate noise levels of about 70dBA.

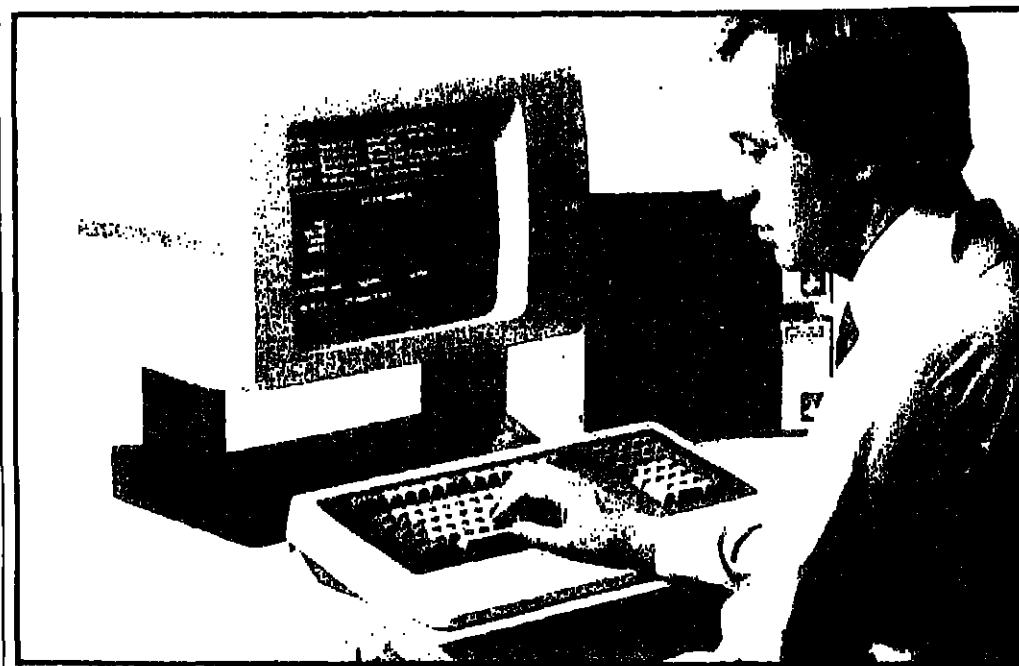
The CalmCover is an acoustic enclosure which encases the printer. It was developed by White Horse Acoustics, ergonomic and industrial design consultants Bruce Renfrew Associates, and ICI Acoustics.

Acoustic tests in a free field environment have shown that CalmCover can lower printer sound levels from over 70dBA, to under 50dBA, says White Horse, giving noise energy reduction of 95%.

Base models will house the printer, together with continuous stationery tractor attachments, and may be upgraded to accommodate an automatic paper feed.

Several models and sizes are available to house most printers.

White Horse Acoustics (CW), 8-10 Millgate, Thirsk, North Yorkshire YO7 1AA. Tel: (0439) 3599.



The ITT 3290 multi-function terminal.

Intelligent terminal for IBM users

ITT Business Systems has aimed its sights at the rapidly growing market for multi-function office terminals. The new IBM-compatible 3290 workstation represents the first stage of ITT Business Systems' drive to capture a share

of a market expected to reach more than a million units by 1990.

The ITT 3290 is the first multi-function terminal for IBM computer users in the UK, designed for use in the traditional 3270 DP environment. It costs about £5,000

for a configuration of screen, keyboard, printer and diskette.

ITT Business Systems (CW), Lion Buildings, Crowhurst Road, Hollingbury, Brighton BN1 8AN. Tel: (0273) 507111.

Datac gets into microcomputer manufacturing

A NEW Z80-based microcomputer system, designed for control applications in educational establishments and industry, has been launched by Datac. The introduction of the Datac MC MicroController marks the company's move into microcomputer manufacture. Datac is already established as a manufacturer and distributor of data printers and liquid crystal displays.

The MC MicroController is housed in a steel and structural foam cabinet built to withstand the rigours of educational and industrial environments. The unit's integral power supply operates from 240V AC or 12V AC and fully conforms to safety regulations relating to products used in educational establishments.

The Control Basic language used by the machine has been jointly developed by the University of Oxford and Warren Spring

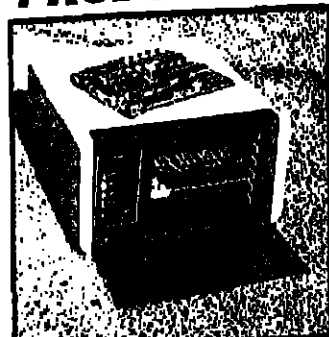
Engineering Laboratory specifically for control applications. Control Basic is an extended version of Basic, including necessary features for real time process control.

The MC's real time features include real time clock interrupt handling and a scheduler which enables the computer perform a number of different tasks at the same time.

Interfacing the Datac MC with external hardware is done with the addition of the optional experimental unit and plug-in accessory boards. Powered from the main computer, the experimental unit is connected by a flexible jumper which plugs directly into the MC's expansion bus.

Datac (CW), Tudor Road, Broadheath, Altrincham, Cheshire WA14 5TN. Tel: (061) 9412361/2.

PRODUCTS



Jaguar Communications' BNA X25 PAD.

Jaguar adds to its X25 kit

NEW FROM Jaguar Communications is the BNA range of X25 Packet Assemblers/Disassemblers, or PADs.

The BNA products enable users of existing asynchronous and 2780 terminals or computer ports to make use of the new X25 networks, such as PSS and Euronet. No change to existing software is required to make calls to or accept calls from the networks.

Three models of BNA PAD are available, offering between four and 96 user ports into one to 12 X25 lines. All products conform to CCITT X3, X28 and X29 recommendations. For OEM users, the four-port Micromux is available as a single printed circuit board for incorporation into their own terminal or computer products.

Jaguar Communications (CW), Elton House, London Road, St Albans, Herts AL1 1LJ. Tel: (0727) 32983.

Systime extends 32-bit range

SYSTIME has extended its 800 series of 32-bit computers with the introduction of the 8730 processor.

The new model, which fits in at the low end of the 8000 series - based on the Digital Equipment VAX processor - provides extra functions to enhance performance and reduce the cost of expansion.

The 8730 can address up to 5 Mbytes of memory and support up to 2048 Mbytes of disc storage. Its low power consumption and heat dissipation make it suitable for siting in an office environment.

A typical 8730 system is housed in a 56 x 21 inch cabinet.

Prices for the 8730 start at £31,000.

Systime (CW), Concourse Computer Centre, 432 Dewsbury Road, Leeds LS11 7DF. Tel: (0532) 702211.

Bursting from your desktop

THE Decollator 60 and Burster 120 from the General Binding Company are compact, desktop systems, designed to meet a wide range of needs in any data processing installation, large or small.

The units fit easily on to desks or table tops, says GBC, and are ideal for small business machine users, "satellite" operations of large data processing centres, or for complementing the use of larger equipment during "peak" periods.

The Decollator 60 decollates small packs of two or four-part continuous, handling carbonless paper and carbon-interleaved forms equally well. The device is made from chrome-plated steel tubing and lightweight, impact-resistant plastic, and will easily store on a shelf or in a cupboard.

The Burster 120 has a steel frame, and is cased in lightweight,

Sintrom bid to boost VAX comms control

AN enhancement from Able Computer for Digital Equipment VAX-11 series computers is available through Sintrom Electronics. The VMZ/32 is an intelligent microprocessor-based communications controller which exceeds the performance and efficiency of the existing DEC DH11 and DZ11 controllers, and the DMF/32 for VAX/730 computers.

The VMZ/32 incorporates 16 asynchronous communications lines for modern and terminal control on a single hex-width board, and is fully software compatible with VAX/VMS Version 3 software. The communications lines are presented as two eight-line multiplexers using two DMF32 compatible asynchronous

interfaces. Each group of eight lines is controlled independently by the DMF32 "port" of the VAX/VMS Version 3 terminal driver. The VMZ/32 is accessed through standard VAX input/output interfaces.

When fitted with a dual-mode distribution panel, the VMZ/32 can also be configured to active or passive current loop operation while still giving the same performance level. A choice of 16 operational baud rates from 50 bps to 19.2Kbps can be programmed, as well as an alternate rate for split-speed operation.

The use of DMA and SILO buffers substantially improves the performance of VAX-11 series computers whilst greatly reducing

the system overhead. For output operations either DMA or SILO modes may be software selected. During SILO operation, each transmit line buffer may be loaded with up to 32 characters in a single operation; when DMA operation is used characters are transferred to and from VAX-11 memory by the VMZ/32 itself.

For input operations, a 48-character input SILO is available for each group of eight lines. A program interrupt is generated after a SILO is full and a software selected time delay has elapsed, or after 18 characters have been received.

Sintrom Electronics (CW), 14 Arkwright Road, Reading, Berks RG2 0LS. Tel: (0734) 875464.



CalComp's IGS500 is a minicomputer-based interactive design and drafting system.

Power to the picture

COMPUTER GRAPHICS and CAD systems manufacturer CalComp has announced a colour graphics workstation and a more powerful CPU for use with its 16-bit minicomputer-based IGS Series computer aided design-drafting systems.

Russ Cockrell, UK sales manager of CalComp's systems division, said: "The effect of the new CPU is to improve workstation response times by between 50% and 100% depending on the work

mix, while the new colour graphics capability makes it much easier to identify different elements in a drawing."

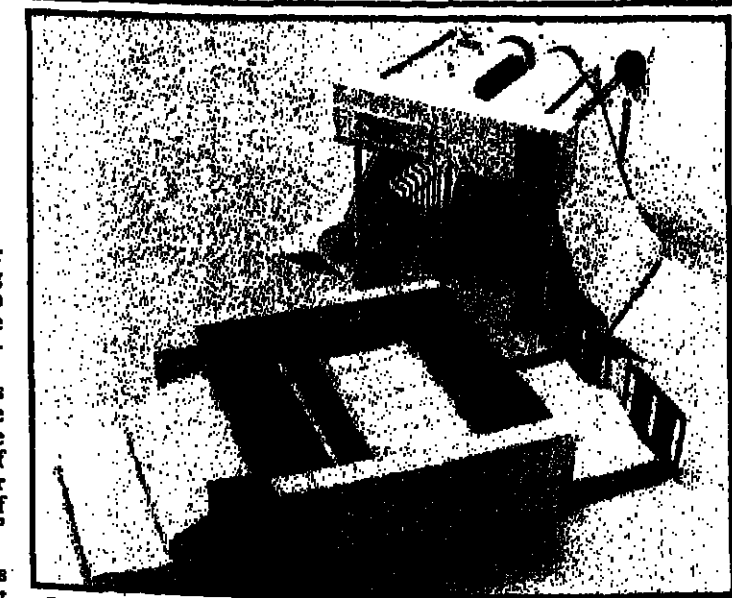
The new colour workstation which is directly compatible with existing CalComp IGS systems can display up to 16 colours simultaneously, from a palette of 4096, on its 19in graphics screen which features a resolution of 832 x 624 pixels.

The dynamic graphics capability is further enhanced says the com-

pany, by the use of the simple joystick picture controller.

This enables the user to pan, or roam, smoothly and rapidly around a drawing, parts of which may well at times be outside the screen viewing area and by then simply twisting a knob on the top of the joystick, to dynamically zoom into a small section of the drawing and back out again at will.

CalComp (CW), Cory House, The Ring, Bracknell, Berks RG12 1ER. Tel: (0344) 50211.



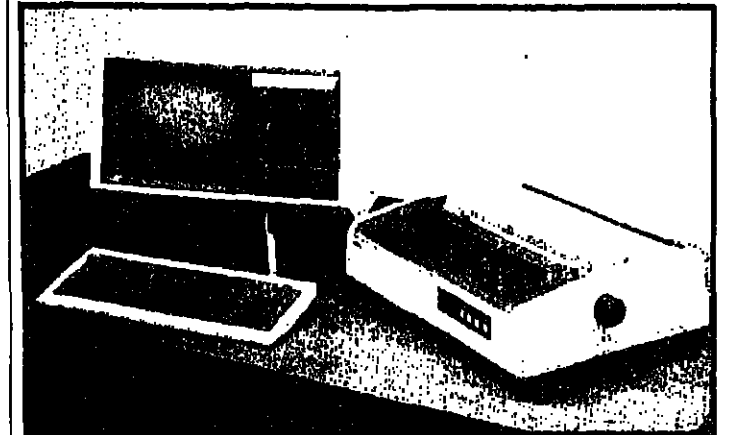
GBC's Burster 120 with the Decollator 60 (top right).

durable moulded plastic. It is easy to carry and handle, and will burst into two or three part continuous forms at the touch of a button. The Burster 120 is easy to load and can be operated, or stored, almost anywhere.

To complement this mini form

handling equipment, GBC has introduced a range of data processing filing systems, including polypropylene DF binders, filing trolleys and lateral filing racks.

GBC (CW), Domin Road, Camberley, Surrey, Tel: (0276) 62167.



Philips Prospect aims to provide cost-effective dedicated word processing.

Philips plugs WP gap

THE PHILIPS Prospect sets out to fill a gap in the word processor market. It offers full word processing and includes a diagram-drawing facility.

Prospect, although a low-cost word processor, is equipped to perform the complex number of information management procedures traditionally associated with the Philips P5000 Series. This has been achieved by incorporating the software system of the P5000 range into Prospect, which offers facilities such as file management, glossary, sort, locate, graphics and library as well as normal copy functions.

Philips believes there are three features in particular which make Prospect good value for money. First, the design philosophy accepts that many users of word processors do not want to be able to use advanced software packages to perform other complicated data processing tasks. By accepting this premise, it was possible to design the Prospect with a 64K memory, more than adequate for "full-house" word processing needs.

Second, the constant advance in technology makes it possible to achieve the same results today with smaller and cheaper units than

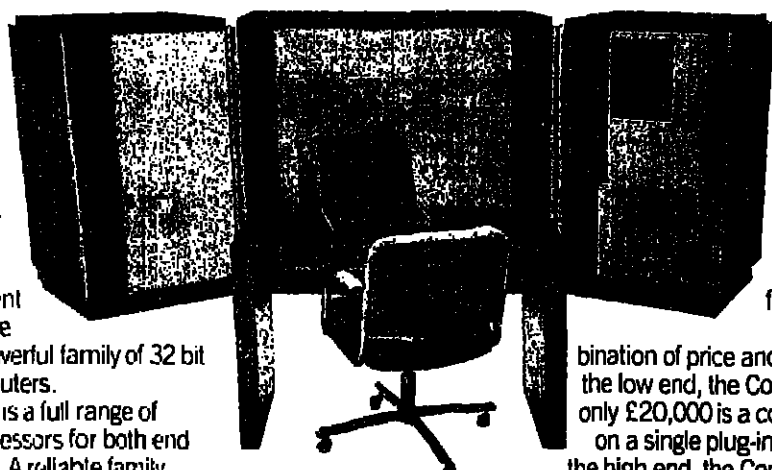
would have been needed only a few years ago. Third, a modular approach has made it possible to use existing units with consequent economies of scale - and of course the advantage of proven engineering for the modules concerned. The most obvious example of this approach is that the Prospect uses the same keyboard as the Philips Satellite.

Prospect consists essentially of a single housing containing a VDU, the central processing unit and a dual disc drive. The VDU is a high-quality display offering 31 lines at 80 characters per line, with the ability to scroll up to 94 lines vertically and 250 horizontally. Because the entire unit is stack-mounted, the VDU angle can be adjusted for best visibility. It is also provided with a brightness control.

Two modules are cable-linked to this main unit. One is the low standing keyboard, identical to that of the Philips Satellite. The other unit is a bi-directional printer capable of printing at 40 characters per second.

Philips Business Equipment (CW), Mallard House, Torrington Place, London WC1. Tel: 01-580 6633.

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Corporation, Dunlop and Rolls-Royce to name but a few. The Concept 32 family provides an unbeatable combination of price and performance. At the low end, the Concept 32/27 from only £20,000 is a compact processor on a single plug-in module, whilst at the high end, the Concept 32/87 is the world's fastest 32 bit super minicomputer - for under £100,000 it's over 3 times faster than any other minicomputer system.

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GOULD

Electronics & Electrical Products

Daisywriter can now plug into any computer

THE new Daisywriter 2000 from CPU Peripherals has been enhanced by the company. It retains features of the original 2000 model introduced a few months ago - 16K or 48K buffer with 99% full warning; auto or manual selectable baud rates from 50 to 19,200; selectable page length settings; variable pitch and proportional spacing; 20 chps bi-directional printing; linear drive motor, dust-free enclosed daisywheels and 3-chip processor control for reliability.

New features include a universal interface. By changing the connector cable, the printer can plug into any computer and operate on software designed for

any other daisywheel printer.

Daisywriters can now be plugged directly from one computer to another with no change in software. This quality includes coping with signals peculiar to the Pet, which other computers do not use.

Working with microcomputers without an escape key is no problem. A short keyboard sequence at the beginning of the day sets up whatever the operator decides will be the escape code and the printer will recognise it as such until power-off.

CPU Peripherals (CW), Rod Industrial Estate, Govett Avenue, Shepperton, Middx TW17 8AQ. Tel: (98) 46433.

New printer for UK market

THE Daisy Systems new M45 printer is now available in the UK exclusively from Peripheral Hardware.

The M45 has been designed so that it can be plugged into most computer systems by simply changing a plug-in interface unit.

PHL will be supplying, as standard, interface module INT1, which has switch selectable

RS232C, current-loop, Centronics and Data Products interface.

The hammer assembly, developed by Daisy Systems for the M45, is claimed to last two to three times longer than conventional daisy-wheel print heads.

Peripheral Hardware (CW), Monkpath Industrial Park, Shirley, West Midlands, B90 4NY. Tel: 021-745 3033.

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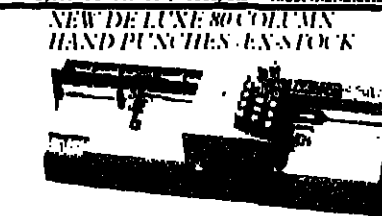
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PRODUCTS



The Astro 1600

Burster for small users

ALACRA, supplier of computer forms handling equipment, has announced a new addition to its Astro range of bursters and decollators. The Astro range was launched two years ago to meet the growing demand from smaller computer installations for equipment which would handle the output from these at an economical price.

The new addition is the Astro 1600 burster, aimed at the small-to-medium size user.

The Astro 1600 burster computer stationery into separate sheets. It can handle form depths between three and 12 inches, and can also be fitted with margin trimmers to remove the sprocket holes from the computer stationery. For typical computer forms of 12 inch depth (approx A4 size), the Astro 1600 can burst 7,700 sheets an hour.

Alacra (CW), Ivagh Avenue, North Circular Road, London NW10 7UJ. Tel: 01-965 0311.

Forms for leading micros

DECREASING COSTS of microcomputers and business software packages have made them a viable proposition for even the smallest company. But there is still a need for well presented documentation to feed into and be processed by the computer.

Moore Paragon, specialist in business forms, provides a range of low cost and simple-to-use business forms packages available off-the-shelf in preset layout form.

These packages are claimed to cover 90% of normal business transactions such as invoices, delivery notes, receipt notes, statements, remittance advice, payroll, giro credit forms and multi-purpose indomitable forms. Also available is a special Moor Paragon "Speedinailer" form construction for confidential pay advice which can be mailed with complete security.

The forms packages can be provided for a large number of leading microcomputers such as Apple, Tandy, Commodore, Adler Alpha-numeric and Olivetti using a wide variety of established software accounting programs like Systematics, Tabs, Padmede, Tridata, Informex, HB, ISA Spectrum, LSI, MPS, Bristol Software and Micromanagement.

Specifically for Systematics software packages, Moore Paragon has developed both input and output documentation. This means that data such as telephone sales orders, hand-written or typed invoices can be entered directly onto specially designed multi-part sets in logical sequence so that one of the copies can be used as the computer input document.

Moore Paragon Business Forms (CW), Moore House, 75-79 Southwark Street, London SE1 0HY. Tel: 01-928 9022.

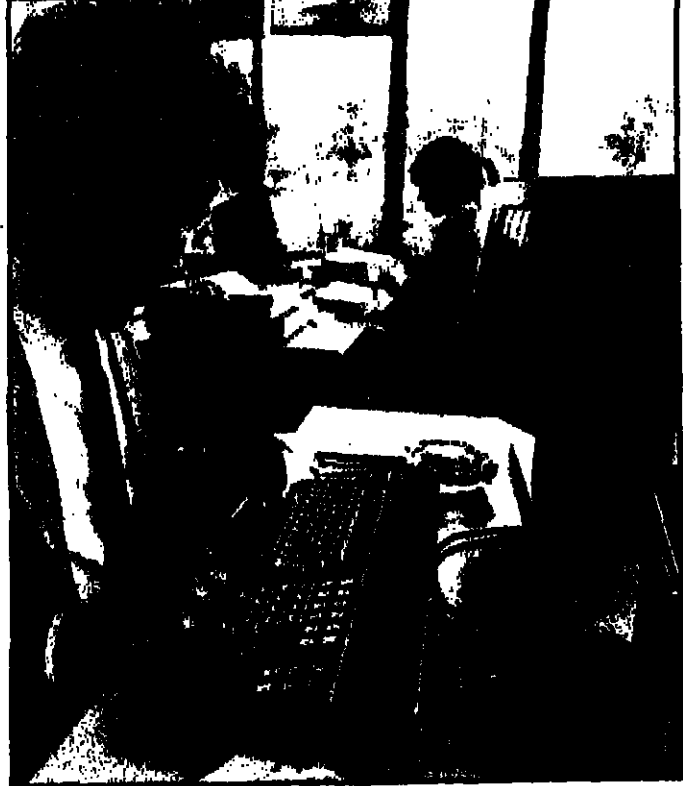
UK launch of Olivetti's multi-task minicomputer

OLIVETTI has announced the UK release of its multi-workstation, multi-function computer called the S6000, which has already netted £5.5 million for the company since its launch in 1981.

The S6000 has been conceived with the idea of combining the benefits of personal workstations with minicomputer power. Its multi-tasking capabilities allow several jobs to be performed simultaneously and permits information to be used at the same time by different people.

Through its Boss (British Olivetti System Supervisor) monitor the S6000 manages information, ensuring that confidential data are kept secure and assisting with the job of organising tasks into order of priority. An additional feature is that workstations can send and receive electronic messages between one another.

Some of the S6000 hardware capabilities include self-diagnosis of faults, modularity, expandability and ergonomic design. A suite of specialist software



Olivetti's S6000 multi-terminal computer system.

packages written for the S6000, including some for the accountancy and legal professions and for contractors, has been specially developed by Olivetti, the latest be-

ing a package for Insurance Brokers. British Olivetti (CW), Olivetti House, 86-88 Upper Richmond Road, Putney, London SW15.

Mass storage for Multibus-based microcomputers

DATA Design Techniques has introduced to the UK a range of high mass storage systems for use with Multibus-based microcomputers.

Manufactured by Data Systems Design and designated the DSD 700 Series, the new systems comprise a multi-function controller plus a 19-inch rack chassis unit housing the storage peripherals. The DSD 7215 multi-function controller can be supplied separately for those wanting to build up their own peripheral configuration using Winchester's such as Shugart and Quantum.

The controller requires one Multibus slot and supports a maximum of two 40 Mbyte Winchester, two eight inch double sided, double density one Mbyte floppy disc drives, and a 20 Mbyte quarter-inch cartridge tape streamer. Advanced architecture allows "pipelining" of data to complement disc oriented operating systems such as Unix, and permit usage in applications such as computer

aided design, business graphics, process control and database management.

The DSD 7215 uses a phase-locked loop technique to provide on-board separation of Winchester and floppy disc data - an external separator is not needed. A proprietary ECC integrated circuit handles both the 32-bit error correcting code for the Winchester(s) and the CRC check for the floppy disc(s).

The DSD 700 Series systems are supplied in four basic configurations: DSD 734 comes with a 10 Mbyte Winchester plus one Mbyte floppy, and DSD 736 has a 40 Mbyte Winchester with a one Mbyte floppy. In Models 724 and 726 the floppy disc drive is replaced by a quarter-inch cartridge tape streamer capable of saving or restoring Winchester data at the rate of 10 Mbytes in about two minutes.

Data Design Techniques (CW), 68-70 Tewin Road, Welwyn Garden City, Herts AL7.

DG-compatible storage systems

SYSTEM Industries has extended its line of Data General (DG) compatible storage systems with the introduction of a new option for DG's MV6000 and MV8000 computers.

The new 3400 Storage System is designed to operate on the burst multiplexer channel (BMC) of Data General's MV6000 and MV8000 minicomputers running under the AOS/VIS operating system.

Zebra, Vulcan or Kismet emulation can be supplied using either removable SMDs or Winchester-type drives. This permits users to select storage systems with capacities ranging from 50 Mbytes to 1,024 Mbytes per controller.

The 3400 Storage System's ability to support a variety of software-transparent emulations - plus the ability to mix drives of different capacity on the same system - gives the user a flexible system which can be tailored to meet individual storage requirements, says System Industries.

The new option may also be configured in a dual-channel mode which permits two CPUs to access a common database. This is claimed to result in increased performance and reliability.

The 3400 Storage System comprises a single PC board controller installed into any high-speed peripheral slot for connection to the BMC bus, a multiplexer panel mounted within the CPU cabinet (to facilitate connection of any SI

disc drive), all necessary cables, accessories and full operational and technical documentation.

The basic 50 Mbyte 3400 Storage System, emulating the Zebra 6067, is priced at £9,200. Delivery is 30 days ARO.

Now in its 14th year, System Industries has become a leading independent supplier of data storage systems for Digital Equipment Corporation and Data General users. SI has several thousand installations, many among Fortune 500 companies, and a worldwide sales/service network operating from 50 locations.

System Industries (Europe) (CW), System House, Guildford Road, Woking, Surrey GU2 7QQ. Tel: (04862) 5077.

Ink-jet addressing system

FBM, the addressing and labelling systems specialist, is launching Jet-address, a high speed, direct printing system designed to revolutionise conventional addressing and labelling methods.

Jetaddress uses the new multi array ink-jet technology, the essence of which is a non contact printing head with no moving parts. The ink-jet head fires small droplets of ink at very high speed directly on to any surface - envelopes, plastic bags, cartons etc. It will also print clearly on to uneven surfaces and ready formed packages.

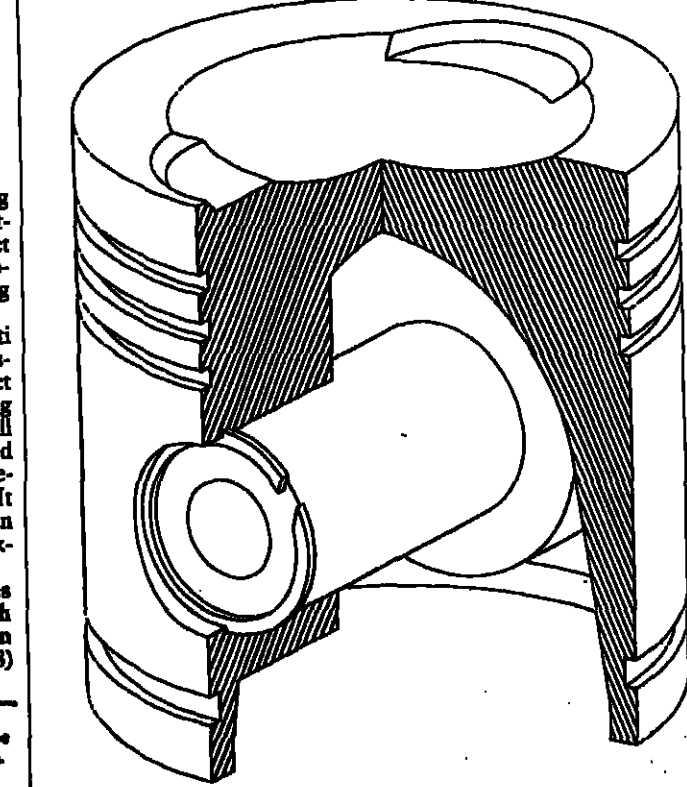
FBM Business Machines (CW), Chapel House, High Street, Deanshanger, Milton Keynes MK19 6HD. Tel: (0908) 568555.

Long life for floppy discs

A RANGE of floppy discs from the Verbatim Corporation are claimed to last five times longer than the industry standard and are being offered with a five-year warranty.

The standard industry specification sets 3,500,000 revolutions as life of a disc. Verbatim claims that its Datadisc discs, which are distributed in the UK by Willis Computer Supplies, deliver an average exceeding 30 million revolutions.

Willis Computer Supplies (CW), PO Box 10, South Mill Road, Bishop's Cleeve, Herts. Tel: (0279) 506491.



Drawing produced with Boxer.

Solid modelling in 3-D

PAFEC has announced a new 3-D solid modelling facility as an extra module to Dogs, the drawing office graphics system.

Boxer is a true 3-D solid modelling facility which enables the design engineer to carry and utilise complete information on solid bodies and is therefore suitable for automated drawing, manufacture, interference checking, mass calculation, visualisation, and robotics, for example.

With the introduction of Boxer, the design engineer now has the

opportunity to work in true 3-D solid modelling.

While computer-aided draughting has for some years made use of three-dimensional software, such software has normally the form of "wire framing" or "surface modelling". True 3-D solid modelling systems are rare, says Pafec.

Pafec (CW), 51-53 Longborough Road, West End, Nottingham NG2 7LA. Tel: (0602) 814673.

A UNIQUE POWERFUL 4th GENERATION LANGUAGE...

MANTIS is the unique 4th generation applications development language from Cincom which improves on-line application development performance 8-10 times.

Unique

MANTIS is the only on-line development tool that permits the user to develop an application from beginning to end in one sitting.

It features a host of powerful applications development techniques such as:

- Top down design;
- Structured coding;
- Step level refinement of programs and systems;
- Prototyping techniques.

Using these features the MANTIS user creates screens, creates files, writes programs, tests/develops applications, documents systems, puts systems on security menus and releases applications for production.

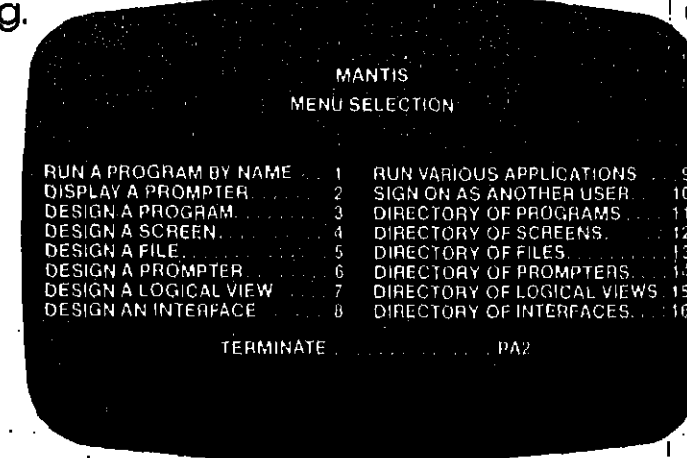
Powerful

MANTIS has the power to dramatically reduce your backlog and improve productivity - but it's also friendly enough to allow the end-user to sort out his own problems.

The key features of this unique language include:

- free form interactive screen design
- conversational file design and allocation
- logical data views

- on-line documentation
- computer aided instruction facilities
- Directory listings with automatic maintenance
- Master terminal security controls
- Independence to interface with any existing file structures or databases
- Batch or on-line hard copy



It's from Cincom

MANTIS is unique. MANTIS is powerful - but it's easy to use. MANTIS is from Cincom, the world's largest independent software manufacturer. So it's integrated with Cincom's famous range of database/data communications software.

And of course it's maintained worldwide by Cincom's comprehensive support network.

MANTIS is already installed by many of the leading computer users in the UK. They know it works, and we want you to also discover just how powerful and dynamic a productivity tool MANTIS is. So if you would like to know more about the product - or speak to a MANTIS user - please ring or write to:

Cincom Systems International, St. Ives House, Maidenhead, Berkshire SL6 1QS. Telephone: (0628) 7273. Telex: 847198

Cincom Systems International, Adamson House, Sharncliffe Square, Manchester M3 1RE. Telephone: 061-832 4332. Telex: 665657

Cincom Systems

MANTIS 4th Gen

Any good DP Manager could go to



for Distributed Data Processing



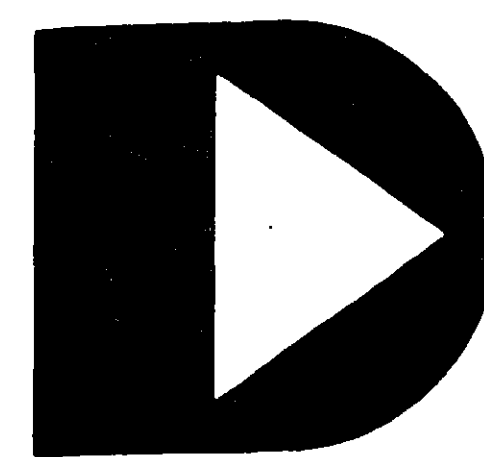
for Personal Computing



for Word Processing

RANK XEROX

for Local Networks...



or to
DATAPOINT
to integrate them!

We have to admit it, our competitors are very well known to you. Each one of them is famous for something or other.

But when it comes to providing a total package—a complete computer capability—that's where Datapoint scores.

We have the individual parts of the technology, of course. But no-one else has had as much experience and success in putting them all together into an integrated system.

That's Datapoint's real strength: an ability to take all the elements—Data Processing, Word Processing, Telecommunications, Electronic Mail—and integrate them into a single system accessed from any single workstation.

And to prove that we really do know what we're talking about, Datapoint have already installed over 4,000 Local Networks all round the

world. Many more than our competitors.

Not that we're resting on our laurels. We're researching further developments involving storage, text, graphics and voice. All with the same objective—to make running a business, any business, more efficient and more productive.

So, if you want part of the picture, take a look at what our competitors are offering. For the whole story, you're better off checking with Datapoint.

Please send me the latest Datapoint literature.

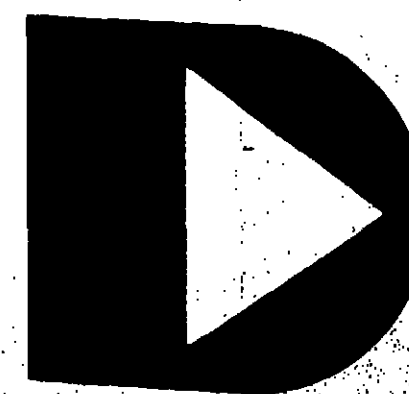
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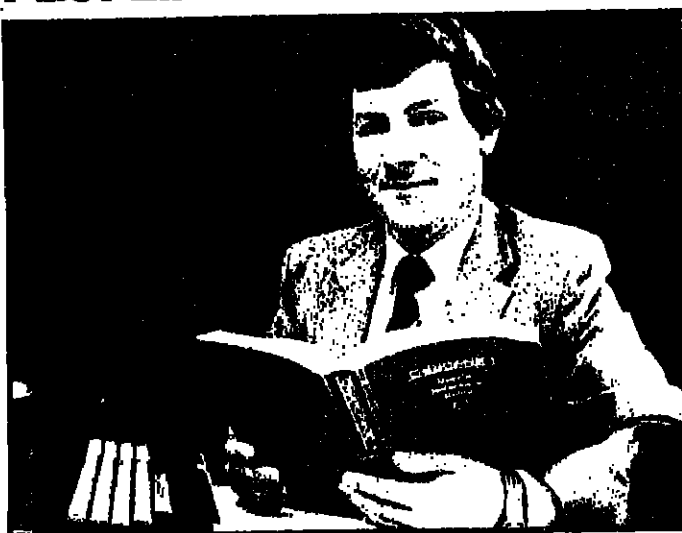
Post to: Datapoint (UK) Limited,
Ventek House, 400 North Circular Road,
London NW10. Tel: 01-459 1222.



DATAPOINT
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The Datapoint Road Show will be visiting major cities around the country. For further details please ring: 01-459 1222.





HANDLEY... National Sales Manager at Osborne UK.

Sales boss at Osborne

OSBORNE UK has named Roger Handley (left) as national sales manager. He joins from Apple, where he was dealer development manager. He has also worked for Nexos and Rank Xerox.

Handley takes responsibility for Osborne's sales activities in the UK, including the development of the company's dealer and distributor network, which currently numbers about 50. He also takes control of the team of freelance sales agents who work independently through dealers and distributors.

Rediffusion Computers has appointed two customer service branch managers. Derek Jordan, formerly South-east branch supervisor, becomes customer services South Central branch manager. Paul Henderson, also a former branch supervisor for the company, takes responsibility for the South-eastern region.

Engineering services manager at Megabyte is Hugh Martin, who joined the company 18 months ago as a computer engineer.

John Moore has been appointed international sales manager at Future Technology Systems. He was formerly director of operations at Nashua.

CTL has extended its push into the public sector market with the appointment of a senior sales executive and a systems consultant, both responsible for public sector accounts. John Richardson joins CTL as senior sales executive. He was previously a sales executive with ICL. Ray Greaves

becomes systems consultant. He was formerly project manager and software consultant at S.P. Support.

Burr-Brown has promoted Rob Stevens from area sales manager to a new position within the company - military account manager. He has been with the company for seven years.

Scan Computers has expanded its Onyx Computers sales team with the appointment of Richard Gill. He formerly worked as a Level 2 sales executive with NCR.



Michael Sanders (above) has been appointed director and general manager of Boston Leasing, the new UK subsidiary of The First National Bank of Boston. He was formerly a vice-president in the European, Middle East and Africa energy division of the Bank of America, based in London. He has also worked for Citibank and National Westminster Bank.

AIM's chief executive Clive Telfer has been elected chairman of the Lumberbridge branch of the British Computer Society for the 1982/83 term. This is the second time he has been elected to office.

Gang-Nail's software division, set up nine months ago to provide software and consulting services to the timber and building materials industries, is to be strengthened with the addition of three more software specialists. Dr David Collington is senior software consultant. He was previously senior engineer with Computational Mechanics. Adrian Beard and Alan Large join the company as software engineers. Beard joins from CM Consultants and Large from Hawker Siddeley Revenue Controls, where he was a computer applications programmer.



Caroline Tee has joined the recruitment specialist Computastaff as an overseas consultant. She will specialise in recruitment of Europeans for permanent appointments in Saudi Arabia, operating from Computastaff's European office. Tee's previous job was with London-based recruitment agency Computastaff.

Director of product development for Office Technology (OTL) is Roger Newman. He joins the company after 10 years with Rediffusion Computers, where he was technical director.

Mike Freedman has joined Kepner-Tregoe as a senior associate, responsible for sales and marketing and consulting. He joins the company from Rank Xerox where he was a regional sales manager.

Bill Smith, who joined Mellorata as financial controller, has been appointed general manager.



Fred Luyt has been appointed managing director of ICL South Africa. He succeeds John Strakey who retires as MD, but remains on the board of the South African company. Luyt joins ICL from Sperry Univac South Africa, where he was managing director. He joined Sperry Univac as financial controller in 1977, and took up his appointment as managing director two years ago.

Lord Jellicoe, chairman of Tate and Lyle, has been appointed chairman of the British Overseas Trade Board. He succeeds Lord Limerick who has held the post since 1979.

Kenneth Ward, director of corporate relations for the Royal Electronics group, has become a member of the Council of the Electronics Engineering Association.

Ferranti Computer Systems' Bracknell division has appointed Jeffrey Thatcher (above) as commercial manager - a new post within the divisional sales department - with responsibility for all contracts and purchasing. He has been with the company for 20 years, latterly as assistant chief engineer.

Micros for mainframes. BCS Sussex Microcomputer Group. Lecture Theatre, Brighton Technical College, Pelham Street, Brighton. 7.30.

Jubilee dinner. BCS Birmingham, Coventry and Wolverhampton branches. The Council House, Birmingham. Tickets limited. Apply to Martyn Davey on 021-743 4222 ext 2234.

Talk by the Rt Hon George Thomas, MP, Speaker of the House of Commons. BCS and other professional associations. Town Hall, Cheltenham. Apply early to D. Went on Gloucester 416301.

Artificial Intelligence - the extent of AI and its relationship with the fifth generation. IDPM Scottish branch. Edinburgh University. Students Association. 60 The Pleasance, Edinburgh. 7.30.

Viewdata. Conference on the state of the art. Institute of Information Scientists WP and computer information special interest group. Details Mrs Bird on (051) 645 2000 ext 8611.

Information Technology Minister Kenneth Baker will give the opening address at the IT82 and Women conference to be held in London on November 8 and 9. The Monday programme will cover the major new technical applications, human aspects of IT, and how it will affect women, and increasing management opportunities for women. Workshops in the afternoon will cover the relevance of IT to small businesses; IT - work organisation and decision making and practical demonstrations. Shirley Williams MP, president of the Social Democrats, is

the star speaker on day two. The programme includes IT in schools, career opportunities, and mass production in the Philippines.



New marketing assistant at Peachtree Software International is Greta Forester (above). She has spent the last five years with British Airways, joining in 1977 as passenger services agent and later working as a stewardess. Following this she was an assistant accountant and then spent two years as scheduling officer.

It is divided almost evenly between hardware and software. The first 13 chapters give a complete description and functional explanation of a theoretical digital computer. The text is concisely and clearly presented, with a successful application of italics to identify the key words in sentences.

If anything, there is too much explanation of the operation of the decimal numbering system before moving to the detailed consideration of the binary system.

There are a number of chapters which explain the differences between the ideal teaching-oriented computer and common commercial machines. In those chapters there is insufficient detail about why commercial and scientific machines are built the way they are. Currently, the speed of evolution of design, and for that matter programming languages, is such that the book appears to have the classic academic handicap of being

too theoretical. It is also a pity that the book fails to develop any perspectives which might lead a student to question, as the Japanese do, the acknowledged shortcomings of the various languages.

Apart from these minor quibbles, this is a clear and basic introduction to computing, which is well and clearly laid out.

The book has some shortcomings - for example, the index shows no entries under the subject heading "psychographics" - the study of psychological or behavioural aspects of an audience or "demographics" - the study of descriptive aspects of an audience, such as age, education and so on.

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BOOKS

Videotex threat to invasion of privacy

Teletext and Videotex in the United States: Market Potential, Technology, Public Policy Issues. John Tydemann, Hubert Lipinski, Richard P. Adler, Michael Nyhan, and Laurence Zwimfer. McGraw-Hill Publications Company, 1982. \$34.95.

UNTIL recently, discussions of videotex and teletext in the popular media have frequently, and unfortunately, been plagued by a common error of thinking - the assumption that because a particular technology or development is feasible, it will be adopted and will thereby transform society.

Mercifully, the latest offering in McGraw-Hill's Data Communications series avoids this error, and the result is a comprehensive, reasoned volume that should be of use to many segments of the public interested in videotex. These include technicians and technologists, business people seeking to make a pound or two in videotex and teletext, and lay readers who simply desire additional information about what videotex is all about and what it portends for society.

Working with a grant from the National Science Foundation, a government agency, the authors have explored many of the areas that will require analysis and policy development, such as privacy issues, market potential, the underlying technology issues, transformative effects on society, and so forth. For the most part, the authors show insight and avoid repeating common errors.

For example, they have included a fair amount of information relating to privacy issues, discussing the need for privacy, the options available, and so on.

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Videotex - a valuable technology, but it holds some dangers.

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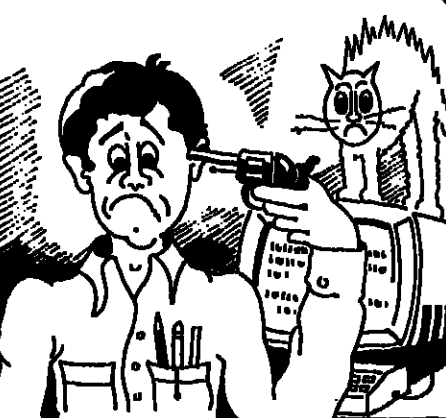
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LOCATION: SURREY

JA308/4

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LOCATION: LONDON

JA308/5

Cardkey

PROGRAMMER

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LOCATION: BUCKINGHAM

JA308/6

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IBM SYSTEM 34 RPGII
IBM SYSTEM 38 RPGIII
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An outstanding career opportunity has arisen with our client. They are currently looking for an outstanding operations analyst. Your extensive operations background will have equipped you with a good understanding of MVS/JES2, CICS, VSAM, VM/CMS, TSO. This vacancy offers the opportunity to be an important member of the development team, responsible for implementing systems. A certain amount of U.K. travel is involved. Suitable qualified applicants should ring Mike Mannion on 01-723-4053.

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Shift Leaders with at least 4 years experience in a large IBM installation (preferably 3083s) with special emphasis on MVS, TSO, JES 2/3, JCL and utilities. NETWORK OPERATORS with in-depth data communications experience in a medium to large IBM installation (preferably 3705s using MVS and VTAM).

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MANAGEMENT & EXECUTIVE SELECTION

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1331

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If you enjoy working in a professional environment, contact **Ian Payne** now on **021-236 3761** (24 hour answering service) or alternatively send him a brief CV at the Birmingham office.

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Ref: CW2110/4

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Candidates, male or female, preferably aged between 26 and 32, must be nationals of one of the Member States, and know two Community languages, with a knowledge of technical English as a necessity. They must also possess an appropriate university degree, together with experience of the basic software and superstructures of the VME/B system on ICL.

Salary and terms of employment will reflect the importance which the Commission attaches to the post. Candidates selected for interview will be given full particulars.

If you are interested, please send a detailed curriculum vitae to the following address, giving the reference ISL/82:

Recruitment Division,
Commission of the European Communities,
rue de la Loi 200,
B-1049 Brussels,
Belgium.

The closing date for the receipt of applications is
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(1250)

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**GRAMPIAN
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(1318)

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S.A.P. Please

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(1248)

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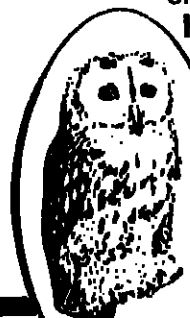
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COMPUTER SERVICES

SALES AND MARKETING OPPORTUNITIES

The smart salesperson argues that there is no point in fighting over common ground, according to Ivan Newman

Getting the customer on your side is a lot like going into battle



"The boss has gone over the top with this sales training exercise."

BE honest, what is the difference between you and the competition? They have their system together with its strengths and weaknesses; you have yours, also with strengths and weaknesses. There is green display, yours is amber.

So what? The only real difference between you and the rest is you.

So how can you make all the difference? In a way, it's like any general with his troops - he trains them, he tests them, he practises them in mock battle. His troops are the thing between him and the enemy. That is what "arming for competition" is all about.

Let us go back to selling basics and take one way of selling - call it "niche selling". Here the customer is faced with a whole phalanx of competing equipment, each proposal claiming (and perhaps even proving) its ability to do the required job. How does the customer choose which submission is most suited to the job?

Providing that there is no clear leader in terms of price, delivery, features and performance, then the competing equipment is placed within the "common ground". The smart salesperson argues that there is no point in fighting over the common ground, but that the best chance of success depends upon features not shared by other

systems.

It is to assist in finding this niche for the feature(s) that arming for competition is of help.

The best way to arm for competition is to stage (as the general does) mock combat on training courses. Once the troops have grasped the methodology on exercise they should be in a position to repeat the exercise in the field.

Stage 1 in the process is to analyse one's own product thoroughly and review this with the sales team.

Stage 2 is to obtain the same information about the competition. Clearly a more difficult task, for no "army" publishes its dispositions to aid the "enemy". However the sources of competitive information are legion - Datapro, Auerbach, IDC not to mention exhibitions, trade shows and sales literature.

Stage 3 is to sit down and design role-play case-study material. If at all possible, this material should be drawn from experience, to give it realism. The customer profile chosen should allow both your own and competitive equipment to have both common ground and unique. Ideally authentic tender requests should form the basis for this stage.

Stage 4 involves briefing the

troops. As with any mock battle, half the troops have to be the enemy for the purpose of the exercise.

Stage 5 - let battle commence! Your team and the competitive team withdraw with customer profile to decide tactics. The "customer" also formulates his team response on various topics - with the instructor's help, of course. There then follows a series of interviews in which the opposing teams probe the intricacies of the customer's job, his needs, requirements and priorities. Needless to say the customer situation is designed so that special features can be brought into play. The aim of the game is to outflank the opposition and draw the deal away from common ground and his features to your strengths. But not just for features' sake but rather because they match a need (possibly hidden) which the customer has.

Stage 6. After the game has run a prescribed number of rounds, a halt is called and a progress review is made. The onus is now on the instructor to identify the progress made by both parties and advise where further progress can be made.

Stage 7. This is the penultimate

round with the combatants moving in towards their objectives, or fighting a rearguard.

Stage 8 is the evaluation. Which team has achieved what objectives and what did the customer think of it all? At this point the participants should start to conclude that it did not really matter which party they represented, the moral is the same.

Namely, that by skilful strategising, questioning and probing it is usually possible to lead a situation into the areas you are best qualified to fight on and win on. The corollary is that if the deal will not let you do that then you should "qualify-out" or, to maintain the analogy, conduct an orderly retirement.

So here is the difference then -

you! By training to strategise sales situations, the salesforce should be able to get away from merely displaying an excellent memory for features and become more skilful in the use of questioning to pull customers' perceived requirements into areas only you can satisfy.

Ivan Newman - product promotion manager for OFIS at Burroughs.

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